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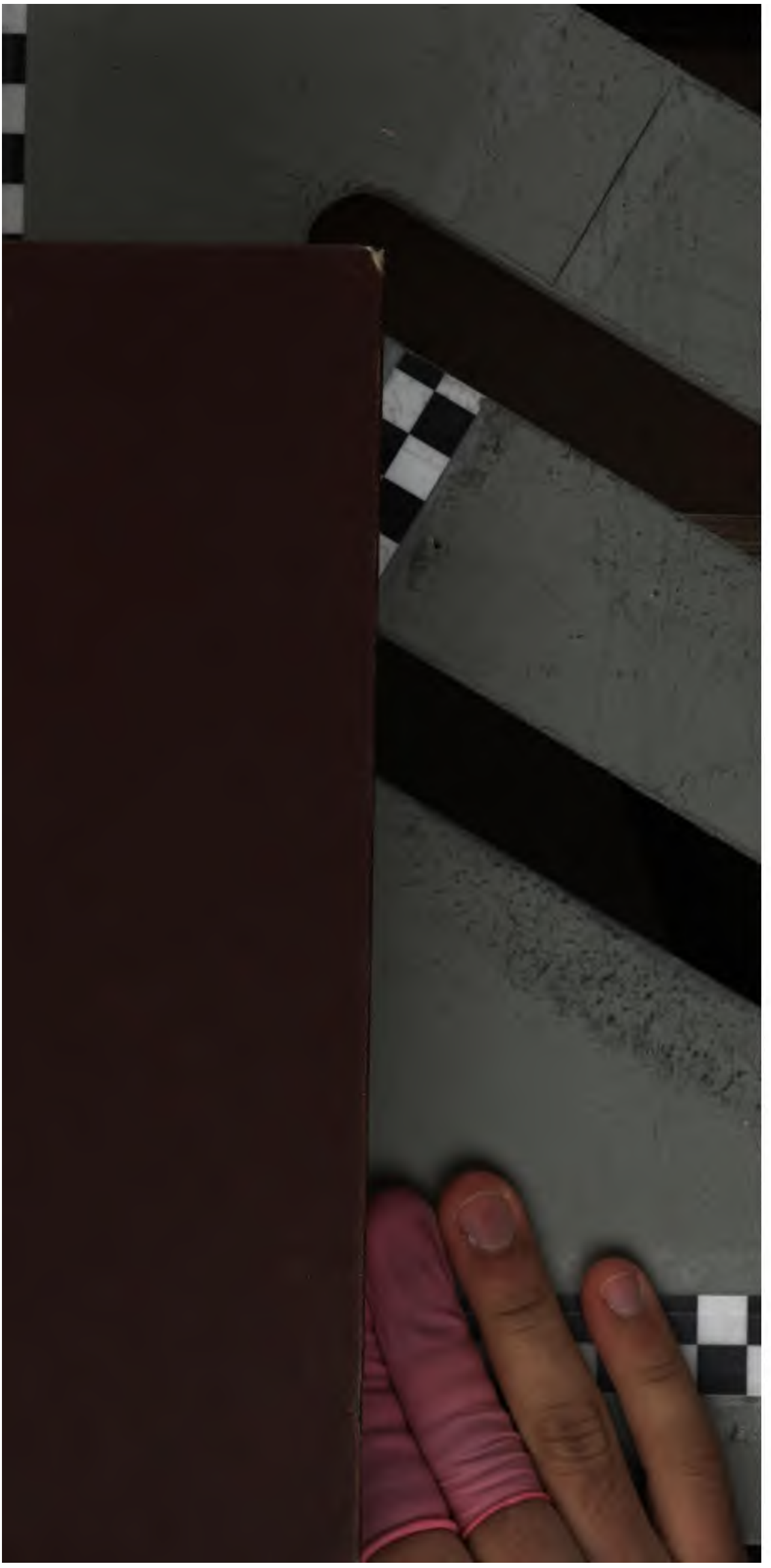

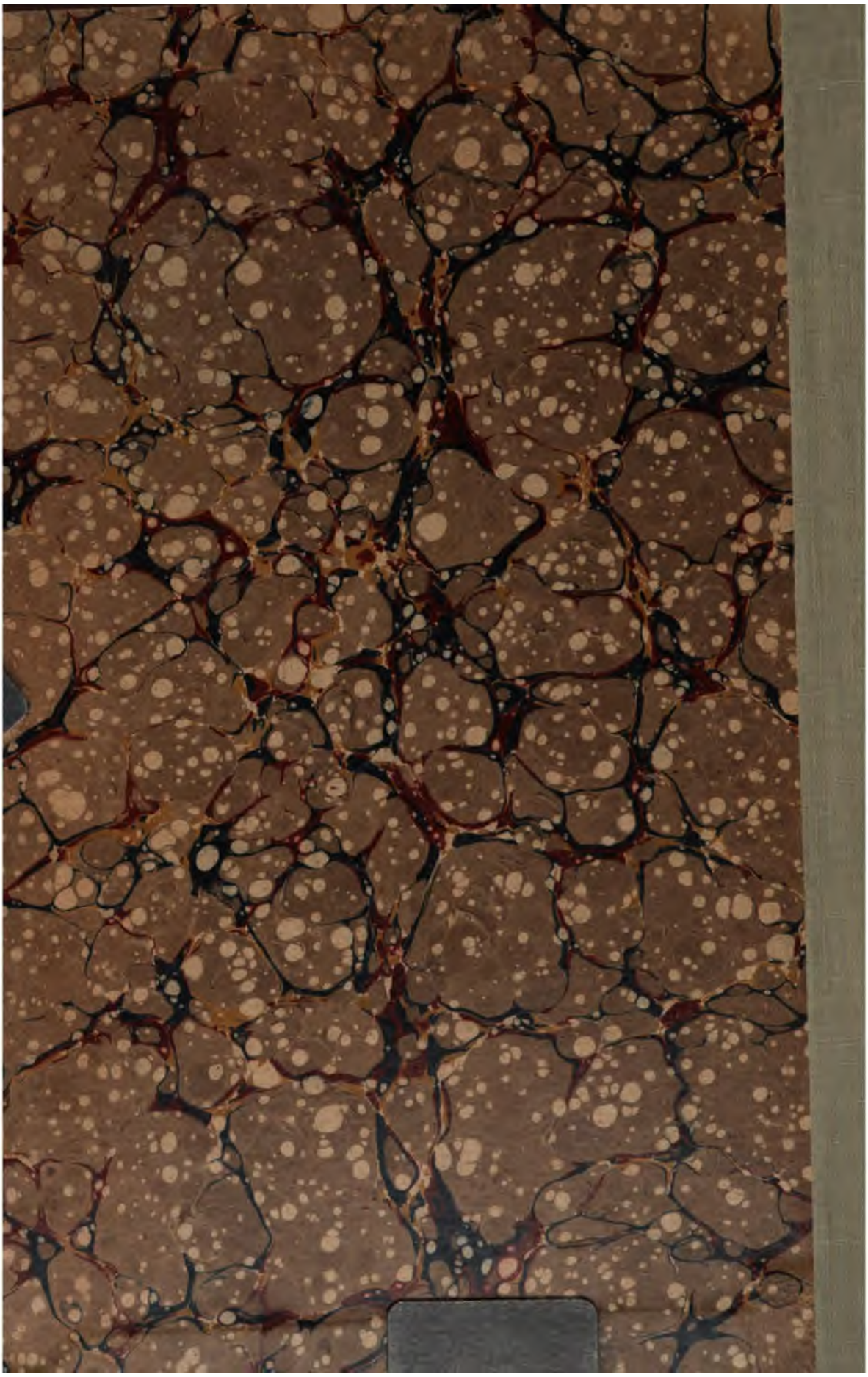

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A HISTORY OF OUR TIME

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The World's Work

WALTER H. PAGE, EDITOR

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PROFESSOR ÉLIE METCHNIKOFF, OF THE PASTEUR INSTITUTE, PARIS

WHOSE RESEARCHES GIVE HOPE OF THE PROLONGATION OF HUMAN LIFE, WITH UNIMPAIRED VIGOR TILL THE NATURAL DESCENT TO DEATH

[*See "The Straight Way of Life," page 9540.*]

THE
WORLD'S WORK

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NOVEMBER, 1907

VOLUME XV NUMBER 1

The Fires

By Rudyard Kipling

An introductory poem to the one-volume edition of Mr. Kipling's verse

MEN make them fires on the hearth
Each under his roof-tree,
And the Four Winds that rule the earth
They blow the smokes to me.

Across the high hills and the sea
And all the changeful skies,
The Four Winds blow the smoke to me
Till the tears are in my eyes.

Until the tears are in my eyes
And my heart is wellnigh broke;
For thinking on old memories
That gather in the smoke.

With every shift of every wind
The homesick memories come,
From every quarter of mankind
Where I have made me a home.

Four times a fire against the cold
And a roof against the rain—
Sorrow fourfold and joy fourfold
The Four Winds bring again!

How can I answer which is best
Of all the fires that burn?
I have been too often host or guest
At every fire in turn.

How can I turn from any fire,
On any man's hearthstone?
I know the wonder and desire
That went to build my own!

How can I doubt man's joy or woe
Where'er his house-fires shine,
Since all that man must undergo
Will visit me at mine?

Oh, you Four Winds that blow so strong
And know that this is true,
Stoop for a little and carry my song
To all the men I knew!

Where there are fires against the cold,
Or roofs against the rain—
With love fourfold and joy fourfold,
Take them my songs again.

Copyright, 1907, by Rudyard Kipling

MR. BLISS PERRY, EDITOR OF "THE ATLANTIC MONTHLY"
WHICH THIS MONTH CELEBRATES ITS FIFTIETH YEAR OF PUBLICATION

[*See "The March of Events," page 9506.*]

The March of Events

IT IS such events as these that continue to compel universal attention: The activity of the Administration to enforce the laws — such as the anti-trust law, the interstate-commerce law, and the land laws — continues and will continue, at least so long as Mr. Roosevelt is in office; this Federal activity has provoked vigorous efforts by many state governments also, some well directed and some very foolish, to curb the undue power of corporations; all this agitation has done at least temporary hurt to the conduct and to the condition of many large corporations, especially to some of the railroad companies. The organs of "Wall Street" (in the sense here meant, there is a Wall Street in every city) continue to decry the President; so also do the strict-constructionists in politics; and yet all obtainable evidence indicates that Mr. Roosevelt was never more popular than he is to-day; that his policies and his conduct and his aims meet the approval of a vast majority of the people, even many of the party that opposes him; and, most important of all, the general business of the country — the activities that touch the lives of the people most closely — continues to be prosperous. The fall in the price of stocks and bonds has been very great, but the foundations of prosperity do not seem to be shaken. And there has come and is coming a much more careful management of great corporations, management that pays more heed to the stockholders and less to speculators.

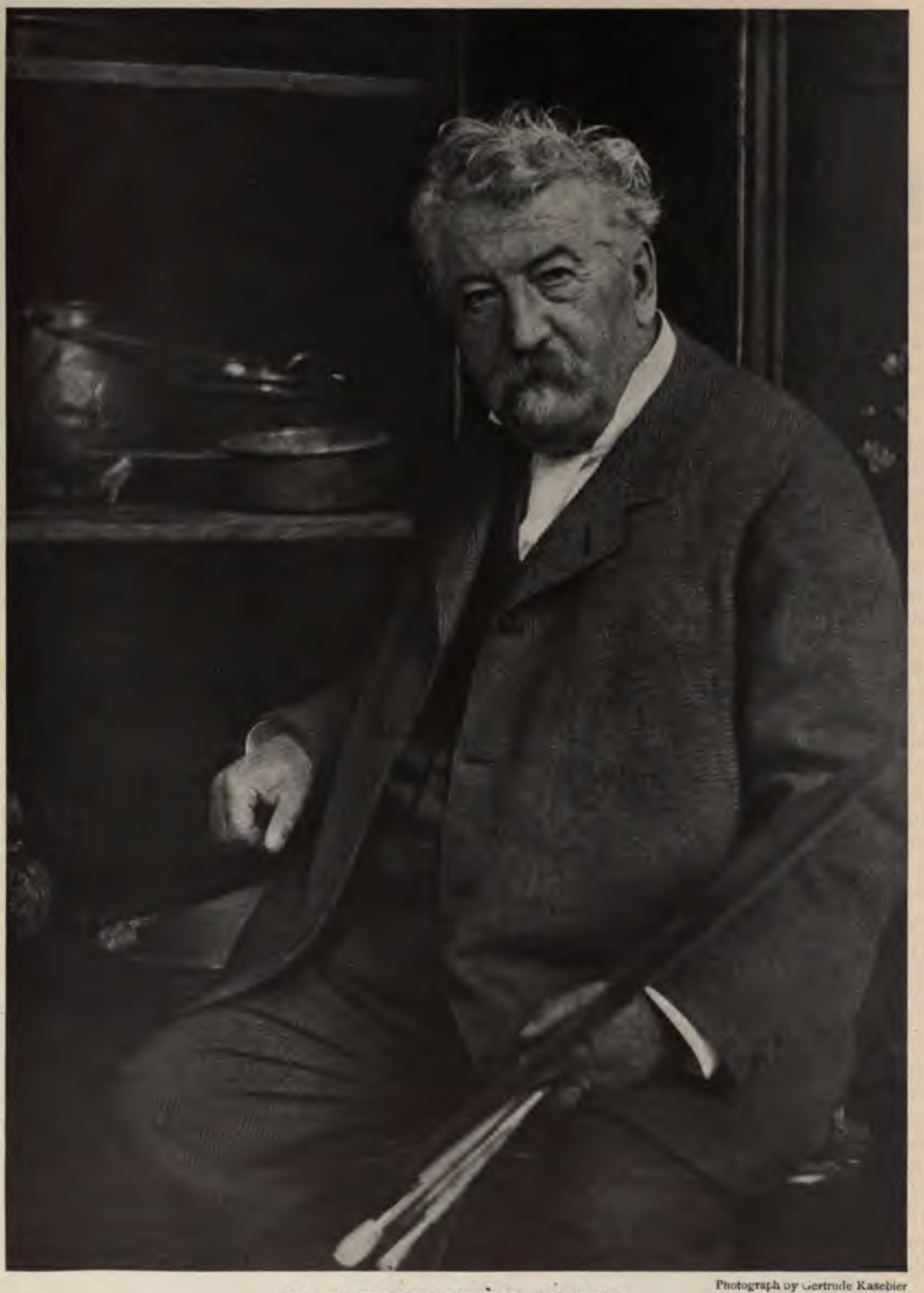
While, therefore, there are enough mistakes and follies to criticize, mistakes made by both the Federal and state governments, and while proper activity to restrain predatory corporations leads inevitably in the direction of a sort of blind crusade against wealth, which is unjust and unfortunate, the industrial condition of the country remains sound, if not buoyant. It is perfectly fair to say that such jars as it suffers are the penalty that we must pay for the sins of the past — the sins committed by the railroads and other great corporations and in their names, and the sins permitted by the public. We could not do economic and financial crimes during a long series of years without having a day of reckoning at last; and such a reckoning as we are now having is cheaper and easier than a panic would have been, to say nothing of the moral advantage that we gain.

AVOIDING A PANIC

THERE are two ways whereby a community may pay the cost of its economic and financial sins. One way is to bring the sinners to justice one at a time — to take up one crime after another, and to make a settlement. The other way is to wait until all the crimes overwhelm the community and cause a panic, financial and moral. The better way is admirably illustrated by the Public Utilities Commission in New York City. The most intolerable thing in any prosperous and civilized community is the conduct of the surface transit facilities in New York. There are old horse-cars, many miles of them; there are vile and ramshackle electric cars, thousands of them, cars that no decent village would tolerate; there is murderous carelessness in running them, by discourteous and ill-trained men; and all these results have come naturally and inevitably from the gross and criminal financial conduct of these roads, which has extended over several managements and ownerships and generations of flagrant financial sinners.

This has gone on in New York all these years because New York has not had good government nor an effective civic spirit, and especially because the great financial concerns, which have their strongest influence in New York, have kept alive the doctrine that business interests must be left free from governmental supervision. The enactment at last of the Public Utilities law — it may be said that its enactment was forced by Governor Hughes — has brought into official light the crimes that everybody knew before and others that the public did not know; parts of this great system of travel have been put into receivers' hands; the huge bubble has burst; the public is waking up to the whole disgraceful condition; and there is hope that in time some improvement will come.

The point is that the bursting of this

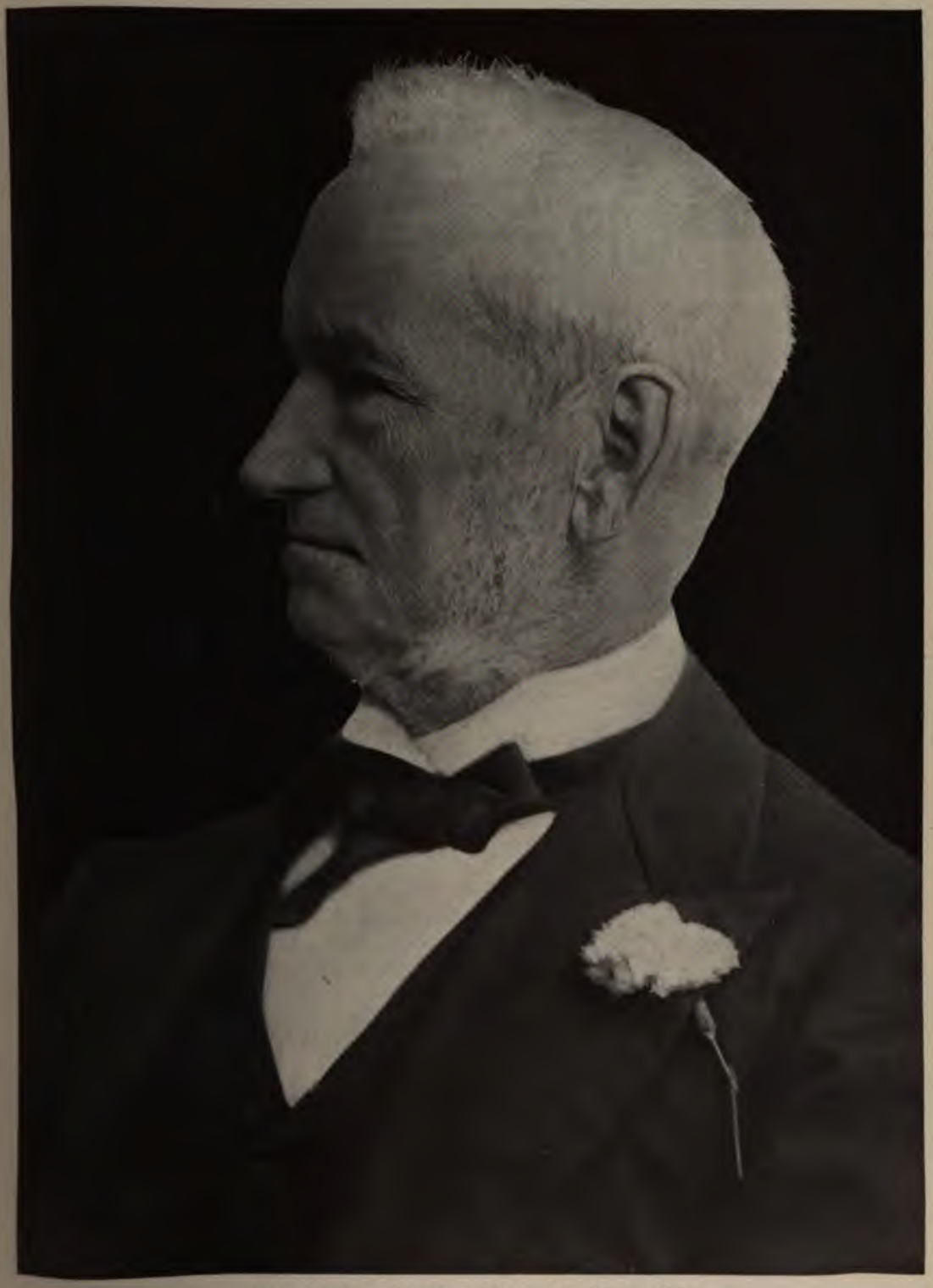


Photograph by Gertrude Kasebier

MR. ANTOINE LUMIÈRE, OF PARIS

WHO HAS PERFECTED A PRACTICAL METHOD OF MAKING PHOTOGRAPHS OF OBJECTS IN THEIR NATURAL COLORS

[*See "The March of Events," page 9507.*]



THE LATE SAMUEL SLOAN, OF NEW YORK

WHO HAD BEEN PRESIDENT OF SEVENTEEN AMERICAN RAILROADS
AND WHO WAS A HIGH FINANCIER OF STRICT PRINCIPLES

[*See "The March of Events," page 9409.*]

criminally blown bubble has come about in a way that does not involve financial interests general. We are settling for our sins, one at a time, and not all at once by a panic, in which the chief sinners have generally escaped and the public has had to pay the penalty. This is the better way. It concentrates attention on particular criminals or groups of criminals or successions of criminals; only one disquieting problem is taken up by the same public at once; the proposition is proved beyond all cavil that public corporations cannot be left without governmental supervision and regulation, that the type of financial magnates that we have hitherto had cannot be trusted to serve the public; and it seems likely to turn out that they may be unable again to pull down the pillars of industry and cause a general crash in which they can escape scot-free.

It is a very reasonable supposition that by this method we may now be avoiding disaster which would now or a little later have taken the form of a financial panic of the old sort.

DANGER IN DISCOURAGING THE SUCCESSFUL

BUT, while the punishment of criminals, the bringing of better corporate methods, and the avoidance of a panic are important, there is no more insistent duty now than to prevent the rise of a popular feeling against honestly won wealth. Such an experience as we are passing through gives the enemies of private property—Socialists, other theorists, those that fail and the discontented, and, worst of all, the sheer partisan demagogues—a chance for both noisy and insidious agitation. It is not a sordid view of life to hold that thrift and industrial enterprise and success and the security of savings and of earnings lie at the very foundations of an orderly civilization; and civilization is successful in proportion to its encouragement of these.

There seems no imminent danger of successful agitation against these foundations of orderly progress; for the people are yet too prosperous. There is no Debs's army, no wild cry for a debased currency, no enthusiastic support of any rich demagogue's advertising campaign; but there is a more or less general feeling that great wealth can not be accumulated honestly; and many upright leaders of industry are for the moment more or less discouraged lest the fashion of regulating corporations take a fanatical turn. The coming of a general depression in business would make such a feeling stronger and would encourage all the forces of disorder. The prevention of the spread of a disorganizing temper ought to be the work of every right-minded man in his own circle of influence. The President did well in his speech at the dedication of the McKinley monument, in Canton, O., to stop and to ask the audience to approve this sentiment:

> "Men of means, and above all men of great wealth, can exist in safety under the peaceful protection of the State, only in orderly societies, where liberty manifests itself through and under the law. It is these men who, more than any others, should, in the interests of the class to which they belong, in the interests of their children and their children's children, seek in every way, but especially in the conduct of their lives, to insist upon and to build up respect for the law."

THE LESSON OF RECENT BUSINESS FAILURES

THE number of commercial failures in the United States for the first nine months of the year is reported by *Bradstreet's* as 6,891. With one exception, this is the smallest number for the corresponding period of any year since 1883.

But the favorable aspect of the report disappears when the total liabilities are discovered to be $111,000,000, which is the largest total since 1897, with the exception of 1904. The report, on analysis, shows that the commercial trouble of the year has centered at New York. More than a thousand failures took place at this city, and the liabilities were the largest since 1896.

The big increase in liabilities is partly due to an outbreak of disaster among large contractors and building firms. About a dozen such failures, due to high cost of material and trouble in raising money to carry on work, swelled the liabilities by nearly $12,000,000. This tendency is not checked, and such failures are likely to continue. Recently one of the biggest surety companies called in its agents and warned them to be extremely conservative in going on the bonds of contractors and builders.

Of course, the more speculative trades feel the strain first. The brokerage business in Wall Street is stagnant, and bank clearings at this point are significantly small. The light total of failures shows that the smaller dealers and tradesmen throughout the country have not yet begun to suffer seriously.

The report, however, points clearly the moral of conservatism. It is a time for business men

to watch expenses carefully, to hold back surplus, to keep out of debt that may prove irksome. It is time for the individual to set his house in order carefully, not in panic nor in fear, but merely in the spirit of foresight that is the true basis of prosperity.

CHANGES AMONG WALL STREET POWERS

THERE have recently taken place sweeping and significant changes in the leadership of Wall Street. For many years the market in New York, where men deal in the bonds and stocks that represent the national railroads and the national industries, has been under the domination — perhaps one might even say under the tyranny — of a clique of great financiers. That clique has been disrupted. Natural forces have taken from their hands the sceptre of power. Once more, Wall Street is to be a free market.

The power of this so-called "Standard Oil party" has been absolute. The market for stocks, in particular, has not in ten years been free from the manipulation, the tricks, the traps, and the machinations of these particular financiers. Great movements of the whole market have been created on fictitious grounds. Necessary financing has been, at times, crippled by the market opposition of these forces. National business, outside the industries in which these gentlemen themselves had interest, has at times gone begging for its proper support, because, as they say in Wall Street, "the market was against it." That phrase has come to mean that the leaders of the Street are not in sympathy with the business so handicapped.

To-day, Messrs. William Rockefeller and H. H. Rogers are practically on the eve of retirement, so far as the Wall Street market is concerned. They have been "eliminated" as market factors. Even the younger members of the group, Messrs. Harriman, Stillman, Frick, and others upon whom Time has not yet laid a heavy hand, have declined in market importance by reason of the events of the last twelve months. The Harriman investigation, following so closely upon the insurance investigation, went far toward bringing about a result that Wall Street at large hails with delight.

There are still many cliques in Wall Street that exercise great market influence, and that are powerful and will continue powerful in all financial affairs. Mr. Morgan, for instance, still reigns, and it looks as though his influence and his policies will be perpetuated; for his son, Mr. J. P. Morgan, Jr., seems to be a man who may continue the career of his father, without diminution of the tremendous headway that has carried the greatest private banking house in the country through so many crises. The First National Bank clique is also intact, full of life, and increasingly rich. No one must imagine, because the end of the Standard Oil dominancy seems in sight, that the market will be that Utopian market for which the dreamer hopes, where value and value alone will guide prices.

The situation has led, of course, to a terrible drop in the prices of stocks. The securities that represented the ambitious plans of the failing group, in particular, have suffered fearful declines. Thousands of innocent men and women have lost heavily in such stocks as Union Pacific, Southern Pacific, New York Central, and Chicago, Milwaukee & St. Paul. The reverse of the picture is the fact that to-day men may go into Wall Street and buy good stocks and bonds, and feel confident, at least, that they are not buying at inflated prices in order to make rich the men who manipulated the prices to their present level. These things balance one another, one man's loss being another man's opportunity.

A FINANCIER OF THE OLD SCHOOL

THERE recently died at Garrison, N. Y., a man who was the president of the Hudson River Railroad before Commodore Vanderbilt seized it to make it a part of the present New York Central; a man who had been, in his day, the president of seventeen American railroads, and who for years fought against the idea of running railroad trains on Sundays. The man was Samuel Sloan. He died in his ninetieth year, many times a millionaire, active to the last in great financial undertakings, yet respected, honored, and unattacked.

Mr. Sloan did not believe in over-capitalization. The company in which he was most deeply interested, the Delaware, Lackawanna & Western Railroad, is perhaps the best example of a great American railroad whose capital stock has not been split up, spread out, and freely watered. He had no ambition to make two shares of stock grow where only one grew before. His principle seems to have been, in the great majority of cases, to establish a connection with some promising property,

and help to make it grow, not in size, nor in manifold possessions, but in wealth and in dividends. In this, he was the direct antithesis to the modern financier, who cares nothing for dividends, so long as he can make his profits through new stocks or through manipulation of the old.

The story of Mr. Sloan is the story of the successful immigrant. He was born poor, in Ireland, in 1817, and came here as a child. He made his first thousands in merchandise, then turned to railroad finance. Upon his faith in the ultimate greatness of this country and of its great properties, he founded his fortune. He was once honored with a state senatorship in New York, and the nation at large gave him honors for his labor in raising Union troops for the Civil War, yet he sought first the honors of commerce, the emoluments of private life successfully conducted — the plaudits of the multitude only after that.

THE WAY TO BRING TARIFF REVISION

A READER of THE WORLD'S WORK asks this question: "How can the necessity of tariff-revision be so presented to the people as to arouse their moral earnestness, the same sort of earnestness that they are showing in trying to get rid of the rule of corporations?"

That is a hard question to answer. The injustices of the tariff are such that the average individual does not feel them — or he has felt them so long that he is not conscious of them. To remind him that the tariff is "the mother of trusts" is not convincing, for it is only a half-truth, just as it is only a half-truth to say on the other side that a reasonable reduction of duties, on properly chosen imports, would lessen the workingman's wages. The tariff-reviser has the arguments and good morals on his side; but they are dull economic arguments and it is apparently impossible to "bring them home to the minds and conscience" of the people except in one way — by the sincere activity of a political party, which can best be aroused by a strong political leader. Mr. Tilden did it, when he was a candidate for the Presidency. Mr. Cleveland did it again, when he was President; and he at last carried the country on this particular issue. Thereafter the Supreme Court declared unconstitutional the income-tax, which accompanied the reduction of the tariff and seemed necessary (as it or some similar measure would again be necessary) to bring in as much revenue as the Government requires. Since that time no great leader and no great party has made tariff-reform its most earnest demand.

Mr. Roosevelt probably could bring it to pass, but he might do it at the cost of a lasting split in his party. Mr. Taft has committed himself to an effort at revision after the next Presidential election. In Mr. Roosevelt's silence and in Mr. Taft's postponement there is, of course, no call to battle. Mr. Roosevelt has seemed to feel that it was better to concentrate the activity of his Administration on definitely executive tasks which he could hope to do with the political and executive machinery that he can command, and that the plunging of the country into a tariff discussion might prevent the definite accomplishment of any important tasks. For this feeling (if, indeed this be Mr. Roosevelt's reasoning, as many of his friends have supposed that it is) there is much to be said; but it butters no revision parsnips. Nor does it help to answer the question how the subject may be made to take hold on the conscience of the people.

Of course, tariff-revision is the one supreme opportunity of the Democratic party; and that party would greatly strengthen itself if it were to find and put forward a courageous leader who should put this demand ahead of all other demands and who should not have half-a-dozen other doctrines to preach during the same campaign. An uncompromising demand by a strong Presidential candidate, of one party if not of the other, seems to be the only way to put the subject actively into the public mind and conscience.

HOW THE TARIFF AFFECTS PUBLISHERS

THE American Newspaper Publishers' Association recently expressed itself for free-trade in paper and in the materials from which it is made. Partly because of the decrease of this material (chiefly wood-pulp) and partly because of trade combinations by the paper-manufacturers, the price has recently rapidly gone higher.

This is a very serious matter to the newspapers and other periodicals; for the price that the publishers of most dailies and of many magazines receive for them is little more than the cost of the paper on which they are printed, and in some cases is considerably less. An appreciable increase in the cost of paper, therefore, such as is now taking place, reduces publishers' profits enormously and will obliterate some of them.

There is, by the way, an erroneous notion held by a large part of the public about the profits made by newspapers and magazines, in spite of their "commercialization." A good many newspapers are profitable, and some in the great cities are exceedingly profitable. But the money made by most of them is far less than the public supposes. A few — a very few — magazines make handsome incomes from their advertising patronage. But a much greater number are published at a loss — many of them at a very great loss. This loss falls sometimes on rich men who thus purchase what they regard as influence or distinction, oftener on men who have invested their money in the false hope of a profit next year; oftener still on a succession of such men, one following another to exchange experience for cash. It would be an astounding revelation if it were known how large a proportion of the periodicals in the United States yield no profit at all. Yet it is hard to kill one. Once started on a career, even an unprofitable and commercially hopeless career, a periodical will go on and on; for, if it stop, it is dead forever, and somebody can always be found who will conduct it a little longer.

Under a wise postal law and with cheap paper and an ever-growing habit of advertising, the public has for a decade or more received its periodical literature at a remarkably low price — at so low a price that an increase in the cost of paper threatens the very economic foundations of the business.

It is little wonder that many daily papers have forgotten their doctrinal allegiance to a protective tariff — on paper at least. It is when the price of necessities is felt in this very direct way that an ever-increasing number of groups of men discover that they are in favor of tariff-revision. An earnest great leader could find a winning following on such a programme — not immediately perhaps, but within a reasonable period of active agitation.

THE PRESIDENT'S TRAVELING CABINET

THE visit of Secretary Taft to Japan as "Secretary of Peace" and his return journey through Europe, and Secretary Root's visit to Mexico again call attention to one of the conspicuous benefits and innovations of a strenuous Administration. As of the visits of Secretary Root to the South American countries and of earlier travels of other members of the Cabinet, nothing but good seems to come of these journeys. These direct spokesmen for our Government carry assurances of good will and have an influence that a long series of the customary diplomatic exchanges of courtesy could not have. They not only carry good influences, but they bring back also both a broader and a more intimate knowledge of other governments and of other peoples. It is too good a custom to be permitted to lapse, this new use of members of the Cabinet as high principals in diplomacy.

Secretary Taft's happy and emphatic declaration, at an official dinner given in his honor in Tokio, that talk of war between Japan and the United States is "infamous," ought to arrest the activity of the criminal press in discussing such a subject. Most of such discussion is "infamous." Absurd, if not criminal, also is the recurring newspaper talk about selling the Philippines, which Secretary Taft described on the same occasion as unworthy of consideration because, among other reasons, we have entered into moral obligations to the people of the islands which it would be ignominious to shirk or to transfer.

THE UNWELCOME ORIENTAL

THE anti-Oriental riot at Vancouver, following the anti-Japanese demonstration some time ago in San Francisco and the driving away of Hindu laborers at Bellingham, Wash., were the work chiefly of men of the labor-unions; but in all these places the general public feeling is on the side of the white men. Violent methods are deplored by the best part of the population; but there is nevertheless no doubt about a general and very serious objection to the coming of men of any of these races in any considerable number — this in spite of the demand on the Pacific coast for more labor. The objection to the Japanese, strangely enough, is stronger than the objection to the Chinese and the Hindus.

There is the same feeling in all English-held lands — in Australia and New Zealand which exclude Mongolians, in Natal which prohibits the coming of more Hindus, in the Transvaal which is trying ultimately to exclude the Chinese permanently. Canada has a commercial agreement whereunder direct Japanese immigration is restricted annually to 500 persons, which, however, had not until the recent trouble prevented the coming of many of them from Hawaii. All this is in spite of the general treaty between Great Britain and Japan, which

sets no restriction on immigration. Thus wherever Japanese and Chinese and Hindu immigration has pressed itself in any considerable numbers on the English race, alike in the United States and in the British colonies, determined local opposition has been provoked, and the treaties are now to undergo amendment.

In the presence of this fact, governments may try to make treaties that show no race-prejudice and the utmost resources of polite diplomacy may be used — in vain, in the long run. Men may decry race prejudice; theoretical arguments may be made to show both the unworthiness of such a feeling and even the economic absurdity of objecting to cheap laborers in countries where the prime need is of labor to do all the fundamental tasks of clearing the earth and of building roads and of doing menial service; but the soundest theoretical reasoning will not overcome the deep-rooted objection to those races with which the English race does not care to mingle its blood and its social ideals. Whatever changes may come in the future, when economic conditions have become more nearly equalized all over the world and when a larger toleration comes of social and religious differences, for the present there are two great conflicting forces in the world — the continuous expansion of the English race and the increasing pressure of the Asiatic races for more room.

For Japanese achievement and efficiency and culture, there is a profound regard in all the Western world, a very much higher regard than for the Chinese as a nation. But the difficulty presented by the immigration of Japanese laborers is not made less by the esteem in which Japanese civilization and achievement are held. The Japanese laborers who have come into English-held countries have irritated their new neighbors much more than Chinese laborers have irritated them. America has yet had, perhaps, too little and too brief an experience with Japanese laborers to make a final judgment, but the judgment so far made is unfavorable. Japan will, therefore, have increasing difficulty in making and renewing satisfactory treaties touching this delicate subject.

The London *Spectator* recently expressed the English feeling accurately in this passage:

"Much as we respect the Japanese, much as we detest the usual phenomena of racial and color prejudice, we are bound to say that in the last resort we cannot wonder that the self-governing English-speaking communities of the empire are determined to remain white men's countries, with all that that involves, and will not run the risk of letting the land they live in and the land they love be made the ground for an experiment which has never before been tried in history — the experiment of a community of mixed European and Asiatic blood, founded on a mixture of the social, religious, and moral ideals of the two continents."

THE POPE LOOKING BACKWARD

POPE PIUS X. seems to be in danger of provoking a crisis in the Catholic Church, particularly among English-speaking Catholics. In his controversy with the French Government over the Separation law, he explicitly declared that church and state should be closely united, and that the church should dominate the whole moral field. He asserted the authority of the Holy See and claimed all Christians as his subjects. As the head of Christendom, he believes himself authorized to dictate that believers shall think only in the old channels. His recent syllabus made religion a hard and narrow dogma, which he alone has the right to interpret. The whole fruit of modern critical understanding of the Scriptures is set aside by a stroke of the pen, with all that better understanding of life and of the universe which a brilliant age of scientific work and thought has won. To these tendencies — the more spiritual interpretation of life, and a wider and more luminous view — he gives the name of "modernism," which he condemns as dangerous heresy.

In a more recent encyclical, Pius X. has gone a step farther. Not content with a general condemnation of "modernism," he consistently proposes to root it out of every parish in Christendom. Liberal-minded Catholics will no longer be free to formulate their views and discuss problems of religious faith. The radical plan of campaign is reported to be as follows:

(1) Catholic professors of the "modern" school are to be removed from educational institutions, and "orthodox" theology and philosophy are to be emphasized in all Catholic schools and universities.

(2) Books and newspapers of "modernist" tendency are not to be read by either clergy or laity. A censorship committee is to be established in every diocese to determine what publications are free from this taint.

(3) The clergy is forbidden to take charge of any publication without the Bishop's consent, and the work of ecclesiastical writers will be closely supervised.

(4) Catholic congresses will be permitted to assemble only on exceptional occasions.

(5) A special council to combat the "modernist" heresy will be established in every diocese.

Addressing the bishops, Pope Pius is quoted as saying: "Everything must be done to banish from your diocese every pernicious book. The bishops are to be above all human fear, to trample all fleshly prudence under foot, and, heedless of the outcry of the wicked, are to remember our proscription and to tear out of the hands of the faithful all bad books and all bad writings. This is not only a right conferred on them, but a duty we impose on them."

This long backward step in an age of light and progress will bring deep regret to all liberal-minded Catholics, and to the world at large. That, at least, is the probable result. There is a possibility that this retrograde movement will have the opposite effect in the United States or in England, or in both countries. The English-speaking Catholics compose the best educated, the most progressive, the wealthiest, of all branches of the Pope's dominion. There are something like fifteen millions of American Catholics and several millions in England. Yet these two great bodies of enlightened believers have little if any more representation at Rome than the American colonies had in the British Government in the days of George the Third. Among the less than fifty Cardinals — the Cabinet of the Pope — there is but one American and no Englishman. Italy, with about thirty million adherents, has thirty-two Cardinals. The whole weight of American influence has been repeatedly focussed on Rome without securing an additional appointment. The disappointment springing from this disproportionate representation must have germinated many seeds of discontent before the recent encyclical was published.

These American members of the Pope's spiritual kingdom have, for the most part, been reared in an atmosphere which Pius X. and his advisers have never breathed. They have been reared in a land where men read what they please, think as they please, and speak or write as they please. American-born Catholics usually exercise all these rights, without ceasing to be good Catholics. The probabilities are that they will continue to do so. And if this "modernist" spirit shall bring upon them a storm of censure, they will receive helpful sympathy throughout America. But every such document as this encyclical is interpreted with a different degree of literalness in every country. It will mean one thing in Italy and quite another thing in the United States.

LEADERSHIP IN OCEAN SERVICE

THE great speed and size and even the ever-increasing luxurious service and equipment of the ocean steamships — the contest between the English and the Germans, in which the English are now the winners — are not the result merely nor mainly of commercial rivalry. On the British side, at least, there is a naval reason; for the English never for a moment forget their necessity for the mastery of the sea. The White-Star steamships, converted into transports, during the Boer War carried from India the troops that relieved Ladysmith and saved the colony of Natal. It was this experience that led directly to the building by government aid of the gigantic Cunard ships, *Lusitania* and *Mauretania*.

The British Government appointed a commission to inquire into the use of turbines; and under governmental suggestion two Cunard ships were built, one the *Carmania*, fitted with turbines and the other, the *Caronia*, with reciprocating engines. These were nothing more nor less than test-ships. The success of this experiment with turbines solved the problem of the propulsion of these two new big ships, as well as of the battleship *Dreadnought* and of the six other big battleships now to be built. It is the British Government, therefore, that by its experiments and its subsidies has enabled an English steamship company to outstrip the German lines. These two great ships, *Lusitania* and *Mauretania*, can carry 4,500 men each — both together an army division of 9,000 — faster for 3,000 miles than any battleship or cruiser afloat. And with the propelling experience thus gained, Great Britain is building battleships of 20,000 tons, equipped with turbine engines that will drive them twenty-two or twenty-three knots an hour, and carrying batteries of rifles that will pierce twenty inches of steel. Our Government — to make an odious comparison — considers and debates about battleships of 17,000 tons with engines of the old kind.

These two big new Cunard ships (the *Mauretania* being slightly the larger) are 790 feet long; of 45,000 tons, gross; and of 70,000 possible horse-power. They will without doubt, when they are well "shaken down," cross the Atlantic

from Queenstown to New York in four and a half days, making an average speed of twenty-five knots an hour. The *Kaiser Wilhelm II* hitherto held the record of the highest average hourly speed — a little more than twenty-three and a half knots. But marine engineers agree that both the new English ships will exceed this record. For their engine-power is nearly twice as great as the engine-power of the German boats — 70,000 horse-power to 40,000. This means not only a cost of $7,000,000 for each of these two new boats, but a coal-cost for every trip across the Atlantic of $29,000. To purchase a small increase of speed at such a price would be impracticable merely as a commercial undertaking. The British Government pays the Cunard Company a yearly subsidy of $750,000 for each of these ships if it maintains an average speed of 24½ knots, a smaller amount if the average be 23½ knots, and nothing if the vessel fail to reach this average.

The *Lusitania* was built large because her size gave the best conditions for speed. But larger boats are not likely to be swifter, and few harbors and sea-approaches, in fact, can accommodate much larger ships. Still, the Hamburg-American Company is having a ship built in England, to be called *Europa*, which will be very much larger — with a tonnage of 50,000 and with a combination of turbine and reciprocating engines. She is, however, not meant for speed, but chiefly for steadiness.

While this interesting advance in speed and comfort and for power at sea is going on, Americans stand on the shore and cheer, taking no part in it and tacitly acknowledging our inferiority on the ocean.

A PRACTICAL PLAN WITH A SOUND BASIS

AN IMPORTANT series of investigations has recently been completed by the New York Committee on Physical Welfare of School Children. The report gives in exhaustive detail the results of a careful examination into the home life of 1,400 New York school children who had been found by the school physicians to have physical defects — chiefly defects of vision, hearing, breathing, teeth, and nourishment. These children were from 85 schools in different districts, were mostly from the kindergarten and first two primary grades, and represented many nationalities, of course. Four especially qualified physicians were selected to make the investigation.

The following is a condensed outline of the most significant facts reported by the Committee after a careful analysis of the 1,400 cases:

(1) If children in the New York schools are typical of school children throughout the Union, there must be in the schools of this country not less than 12 million children with serious physical defects.

(2) These defects are by no means the result of diseases of the parents, of serious insanitary conditions, or insufficient incomes, nor can they be corrected by better nourishment and ventilation.

(3) Children whose parents have long resided in the United States need attention quite as much as the recent immigrant.

(4) There is no "race suicide" in New York tenements, the infant death-rate is low, and most of the children begin life under fairly favorable conditions.

(5) Food conditions are not deplorably bad, sleeping hours are found adequate, but housing conditions are very unfavorable. High rents are chiefly responsible.

(6) Inadequate medical care is given to children and too much reliance placed in patent medicines and home remedies.

(7) Among children of these ages, the employment of a dentist is almost unknown. This fact accounts for many of the defects.

The Committee brings the cheerful news that the only new fact about these defects is not their existence, but is a public awakening to their seriousness. These experts believe that if a comparison could be made the children of to-day would be shown to have sounder bodies and fewer defects than the children of fifty years ago — with the possible exception of defects of vision.

For the correction of these defects, a comprehensive plan is recommended as a substitute for the panacea of "free meals":

(1) Every child in every school in the United States should receive a thorough physical examination.

(2) The attention of parents and family physicians should be called to the defects found.

(3) A careful "follow-up" canvas should be made, to see that the defects receive treatment, and negligent parents should be forced to give their children proper medical attention.

(4) School children should be re-examined at stated intervals, and all children applying for

work certificates should receive a physical examination.

(5) Health and tenement laws should be enforced, hours of labor restricted, dangerous trades regulated, and the abuse of women and children prevented.

(6) The course of study in public schools should not produce nor aggravate physical defects, and a good system of hygiene should be impressed upon every child in school.

The Committee bases its recommendations on the common-sense argument that it is cheaper to pay for a nedical examination than for the schooling of a child who takes two years to do one year's work. Brief experience has shown that most parents gladly correct defects when their attention is directed to them. That this may be done on a larger scale, it is not improbable that the cities will "municipalize the medical man" and thus provide free medical and dental treatment for all school children. Until or unless this be done, two steps are proposed. Either the children of the poor must be provided for by a public or private fund, or else hospitals and dispensaries must arrange to carry the burden themselves. The practical suggestion is made that private hospitals and dispensaries take steps to exclude from free treatment those that can afford to pay, and thus make room for the less fortunate. Especial emphasis is laid on the necessity for more dental facilities.

LOOKING TOWARD A NEW PHILOSOPHY OF LIFE

A NEW standard of morality, a scientific guide to life, and a new hope for humanity against the greatest evils that encompass us" — this is Metchnikoff's "Orthobiosis" — the straight way of life. Surely there could be nothing more interesting than such an explanation as is made in an article in this magazine (by Metchnikoff's English translator) of the philosophy to which his studies in bacteriology lead. The prolonging of human life so that men may die naturally and not by disease, as practically all now die — that would be an incalculable gain. But the social and intellectual results also of such a change would be as great as they are alluring. We should, as a rule and not as an exception, have the wisdom and the skill of the aged. We should not lose men from great work almost as soon as they gain their highest development. But the spiritual, at least the psychological, benefits that "the straight way of life" may bring are even more noteworthy yet. For, if the tempestuous period of youth become calmer, the period of early manhood more healthfully productive, and the mental depressions from which premature old age suffers be avoided — death coming as easily and joyfully as sleep, at the ripe age of a century or more — then most of our present and nearly all the past philosophies of life would become junk. Mankind would start on a new era of living and of development. The work, therefore, that is going on in the Pasteur Institute in Paris is among the most interesting kinds of work now going on anywhere in the world. If a corrective be found for "the pessimism which has tinged so deeply the philosophy and literature, the religion and the folk-lore of ancient and modern times," then life will take on many new meanings.

TRANS-ATLANTIC MARCONIGRAMS

HOW great is the difference between getting a device to work and getting it to work all the time! Marconi made his first public demonstration ten years ago over a distance of less than five miles. Four years later he sent his first uncertain 'S' across the Atlantic from Cornwall to Newfoundland. Only with the present month does the Marconi Company open its offices to general business. It required four years to get one letter across, six years more to make sure of every letter every time. In a very real sense, science and invention together carried Marconi less than half-way; the rest was sheer mechanical skill.

In certain ways, however, wireless telegraphy is less a convenience of the present than a prophecy of the future. After all, the waves which carry the Marconigram are but a bigger kind of light, which is able to run around the curve of the earth as the long sea waves follow a winding shore. If we compare light with sound, the whole world of color comprises something less than a single octave in the treble, while Marconi is using a group of notes very far down in the lowest bass. Between these lie forces as yet unutilized and largely unknown, that wait for other Marconis. Stockton, in one of his later tales, imagines a light by which men could look into the depths of the earth. Science already knows long electro-magnetic light-waves, which will pass through iron and focus through lenses of pitch. Mr. Wells assigns to his Martians huge search-lights, shining with unseen heat rays that set fire to

distant cities and wither forests at a flash. Science already knows heat rays that will shine through ice and set fire to paper on the other side. Science knows another invisible light in the X-ray (supposing that the X-ray is really 'light' after all and not some sort of corpuscle), and invention has put the knowledge to very definite and practical use. Moreover, the latest instruments for micro-photography are built to utilize light that is darkness to the human eye, namely, certain ultra-violet 'colors' in the spectra of cadmium and magnesium. These, having about half the wave-length of visible light, define particles of half the size, but they can be used only with lenses of quartz, since to them the clearest glass is opaque.

Of scores of sorts of light, then, the world uses thus far but three. One is in the infra-red, which warms our backs; the other two are in the ultra-violet which sun-burns our noses. How great is the range of the unseen colors, no man can guess. Certainly, however, between the visible spectrum and Marconi's waves is a space wider by many thousand times than the visible spectrum itself. Anywhere here may be unknown vibrations which will do what the Keeley motor did not.

A NOTEWORTHY MAGAZINE ANNIVERSARY

THE *Atlantic Monthly* this month celebrates its fiftieth anniversary; and it is the oldest of our magazines that has had continuous publication, except *Harper's*; and *Harper's* in its earliest years, before Mr. Alden became its editor, was made up in great measure of articles republished from foreign periodicals. The *Atlantic* really deserves the honor, therefore, of priority as an original American magazine.

It deserves high honor, too, for holding to its old ideals. It had the stamp of James Russell Lowell's good taste and vigor impressed on it when it began, and it has never changed its aim or slackened its striving. It has always been owned and edited by men to whom its character was of greater concern than its profit. All American gentlefolk in literature these fifty years, therefore, have loved it, and that good class loves it yet.

Once upon a time Mr. S. S. McClure advised Mr. Mifflin to illustrate *The Atlantic*. After Mr. McClure had gone, Mr. Mifflin's mind ran on this advice for a time. "Illustrate it?" said he. "Illustrate it!" and his fist hit the table — "I'd die first." Once upon a time, too, a gentleman who wished to start his son on a literary career inquired whether he could buy *The Atlantic* from the publishing house that owns it, and the answer that he received was that he would be more likely to make a successful negotiation for Bunker Hill Monument.

If the impulse given to *The Atlantic* half a century ago by the old group of New England writers be now a somewhat spent impulse, this is the misfortune of our time and not the fault of its later owners and editors. They cannot make Literature to order. But it is a cheerful fact to note that the magazine has more readers now than it has had at any recent period — more than at any time since the rise of the cheaper monthlies.

A good new writer — a writer of distinction, that is to say — can yet make a reputation in *The Atlantic* more quickly and directly and of a more solid kind than through any other of our periodicals; and the magazine's old-time hospitality to good writers is kept aglow by Mr. Perry, its present editor.

ABOUT TRAINING WRITERS

ONE article in this fiftieth-anniversary number of *The Atlantic Monthly* is an argument for the establishment of advanced, post-graduate schools for the training of writers of current literature at our universities — not with the foolish expectation of making men of genius out of only good working material, but with the reasonable expectation of training young men to write carefully who propose to make their living by their pens. The plan is to train them by giving them three or four years of sustained practice in writing under competent criticism and direction before they begin their careers. This practice should, of course, go along with constant reading of the great masters of style.

Well, why not? We train men for all other professions in professional schools — lawyers, physicians, preachers, teachers, architects, engineers; and actors, painters, sculptors, musicians and all other sorts of artists study under the direction of masters, after the usual period of a college education is finished and before they begin to work for a livelihood. It is hard to see why men who purpose to become editors of newspapers, writers for magazines, novelists and historians should not have the benefit of similar professional practice and training. Would they not become better workmen by reason of it?

For instance: it is the aim of THE WORLD'S WORK to publish literature about present activity — that is to say, to secure the best and most careful writing about men that are still alive and at work and about things that are now going on in the world. And it is the ambition of this magazine to be the best-written magazine in our language. Yet it is not the best-written magazine in our language by a long shot, and nobody is more keenly aware of its shortcomings in vigor and in style than the men who conduct it. Yet we do our best. We take our vocation seriously, and we are not lacking either in ambition or in energy. But we are wofully lacking in skill, in style, in force, in *interest* — that is the best comprehensive common word. This magazine (and, for that matter, all the others, including the venerable *Atlantic* itself) are written too ill and too weakly. The editor of any one of them will express a similar opinion about them all. And they would be written better if the editors could find more good writers.

Now, if the men who make up their minds in their youth to spend their lives writing were to receive rigid advanced training and practice, they would write better than we write who now do these tasks and who had no such training in the formative time of life. So much is clear. And, if the world, even the educational world, looked at the craft of writing with the same common sense that men show in their attitude to architecture or to painting or to any other art, the magazines and the novels and the histories and all the other sorts of honest work done with the pen would, ten years or twenty years hence, be better done than now.

One thing is certain, a large number of capable and earnest men who had had such training and practice would find good opportunities awaiting them in the service of the best periodicals, monthly, weekly, and daily; for these periodicals all need and want better writers than we are who do these tasks now. And (to be entirely frank) the public deserves better than we can give it.

Yet not one of our universities has such an advanced, post-graduate school of practice and training, probably because their faculties in literature confine their attention too exclusively to the great literature of the past and forget that the humbler literature of the present really feeds the minds of the masses of men, even of educated men. Nor does the community of educated persons look upon writing as it looks on any other art. The common notion is that any educated person can write well enough; or, if you gainsay that commonplace error, you will set men to talking about Shakespeare and Poe! That is to say, they will project the discussion into the region of "genius." Because any given man cannot possibly hope to write with "genius," therefore he were foolish to give time to training. Thus more superstitions and more nonsense go into the talk about the plain business of writing than about any other subject — perhaps than about all other subjects — under Heaven. Nobody seems to regard it as a craft that can be taught.

PHOTOGRAPHY IN NATURAL COLORS

A PROCESS of color photography successful and cheap enough to be practicable has been perfected and last month was put on the market in the United States. This invention of the famous house of Lumière, of Paris, is the realization of the dream of photographers ever since the first daguerreotypes were taken. And it will probably be revolutionary of the art of photography.

The process has not yet achieved a colored reproduction on paper, but these successful colored transparencies are wonderful enough. They alter the essential character of photography — the making of pictures by contrasts of light and shadow. There are no shadows in the color process. For instance, the side of a sitter's face that is away from the light does not appear on the plate as a black, but simply as a darker flesh-tint. Hence these plates produce a startling effect of reality, as if one saw before him a living thing. Think of a portrait of Lincoln that should show not only his height and breadth and the lines of his face and figure, but that should show also the exact color of his eyes, the tints of his complexion, the exact shade of every gray hair among the black, the gold of his watch chain, the rusty black of his hat and coat — all in shades so delicately graduated that the almost indistinguishable difference between the flesh-tint of the face and the flesh-tint of the hands is clearly indicated. Think of the interest and value of a national gallery of such portraits of the past. Such a dazzling prospect for the future seems open by the perfection of a process that seems already well-nigh perfect.

In landscapes and in "still life" pictures, equally wonderful results have been achieved. In one plate the delicate shade of green

reflected on a white surface by the sunlight on green leaves is caught perfectly.

The process is as simple as ordinary photography, and is very similar to some of the old processes of developing and fixing. One plate has been made — exposed, developed, and fixed — in nine minutes.

The most intricate part of the entire process is the manufacture of the plate, which does not need to concern the photographer. The "autochrome" plates, as they are called, are made with the aid of minute grains of starch — dyed violet, green, and orange — which are mixed and dusted over the plate. When it leaves the inventors' hands, the plate resembles a piece of ordinary ground glass, the intermingled colors being indistinguishable. Its surface is of course coated with a sensitive photographic emulsion.

This plate is placed in the camera with the glass side toward the lens, so that the light rays from the object being photographed must pass through this mosaic of colored starch grains before reaching the film, on which the corresponding color values are impressed. After the developing baths, the result is a color positive which, when held to the light, shows the object in its natural colors.

The inventors of the process are the Lumière brothers, Louis and Auguste, of Paris, working under the inspiration of their father, M. Antoine Lumière, the distinguished dry-plate manufacturer, inventor of the moving-picture machine, philanthropist, and portrait-painter. M. Antoine Lumière is now visiting the United States.

FIVE MILLION NEW SAVINGS BANKS

MORE than $87,000,000 has been added to savings bank deposits in eight years, partly as the result of one man's invention. In 1899 Mr. C. O. Burns was a commercial traveler with headquarters in San Francisco. He earned a good salary and sometimes added to it by extra work. But one day it struck him with particular force that he was saving very little money. He then began putting coins into a toy savings bank that sat on the mantelpiece in his home —quarters, dollars, even gold pieces when he felt "flush" or noticed the box.

One day he opened the box and found it empty. A member of his family had been tempted to buy some expensive luxury and had used the bank's deposits. It then occurred to Mr. Burns that the only way to save money with such a bank was to have a good lock on it and "throw the key away." Then he thought that if the key were given to the cashier of a savings bank, the money in the box could be taken out only by the person who would properly care for it. No doubt, he thought, there were thousands of other people whose savings could be encouraged in the same way. He would work out a plan to solve the problem.

That was the origin of the Auxiliary Savings Bank system. Mr. Burns invented a stout little metal box with a spring lock and a slit through which to deposit coins. He patented his invention, and then went to work to make it pay. In partnership with a friend who helped meet expenses, he interested a savings bank in the state of Washington with an offer to sell the bank a thousand boxes and with each box to get a new depositor with a first deposit of one dollar. The bank paid $2.50 for each box and deposit. Several banks on the Coast accepted this offer, and Mr. Burns went East to extend his operations.

Here his road was a hard one for a time. He changed his offer from a sale of the boxes to a lease of them. He succeeded after a time, and the business has grown rapidly every year since. Mr. Burns now has several hundred trained solicitors who canvass the territory of a bank that wants depositors, and who get for it the agreed number of new accounts. In all, between 4,000,000 and 5,000,000 people who were not savings bank depositors are now using the boxes. They are in use in every state of the Union, in every European country, in nearly every Central and South American state, in Honolulu, in Japan, in India, and in Turkey. By their use, in the city of Florence, Italy, more than $200,000 was put into circulation in one year that otherwise would never have been brought out of the hiding-places in which the poor people kept it. School children and men have learned the habit of saving by using smaller boxes of vest pocket size that take deposits of a quarter or less; and hundreds of thousands of people who shunned the banks for fear of ridicule of their small deposits have learned the banking habit by thus discovering that their accounts were eagerly welcomed.

Last year nearly 500,000 boxes of the pocket size, and more than 300,000 of the larger size, were put into use. They are now manufactured in the United States and in two European cities; and their use is doing a large public

service by encouraging popular savings that amount in all to a huge total.

ABOUT CATCHING COLD

AN ANONYMOUS writer for the English WORLD'S WORK, who has made many interesting hygienic experiments in the service of that magazine, has recently attacked that "bogy of civilization," the taking of a cold; and to his own satisfaction he demonstrated that a cold does not come from being cold. He walked without clothing on wet grass; he took open-air (cold) baths, and remained unclad in the open air afterward; of course he had wet feet; he slept out-of-doors; he did with impunity and even with enjoyment all the things that in the common thought are supposed to be sure to produce a cold.

Thereupon he reminded his readers that a cold is of bacterial origin, that we contract it when we give the proper germs a chance to grow — by the lack of air and sunlight. This has long been a commonplace of scientific knowledge; but it is amazing how the old conception of "catching a cold" survives. If we have sunlight and good air and cold water enough to keep the body vigorous, we may sit in draughts and have cold or wet feet without the slightest danger of colds. Scientific men have proved this and so have Arctic travelers. Those who lead robust lives prove it continually. Yet the bogy of "catching a cold" by opening a window survives in most houses in most civilized lands. Colds are "caught" by not opening windows enough and by living in dark, ill-ventilated places.

A CORRECTION

IN the August number of THE WORLD'S WORK it was said that Senator Heyburn, of Idaho, spoke at the Public Land Convention held in Denver last summer, in opposition to the Government's policy. This statement was published on erroneous information, for Senator Heyburn was not present at the convention—and this paragraph is published to correct the error.

THE TIME TO BUY BONDS

THE bond and stock market has its flood-tide and its ebb. The difference between the wise investor and the unwise is that the wise buys his securities at ebb; while the unwise buys at flood. Taking it for granted that each selects the same bond or stock, and that the bond or stock is good and never defaults its interest or its dividends, the difference is mainly one of income. Yet, every man desires to get the larger income, and every man, too, likes to see the market quotations for his stocks and bonds higher than he paid, rather than lower.

Let us take, as examples, investments in $5,000 New York Central 3½% first-mortgage bonds, $5,000 Chicago & Alton first-mortgage 3% bonds, and $5,000 Rock Island general mortgage 4% bonds. All three are strong bonds, legal for purchase by New York savings banks and trustees. A brief analysis of the difference in results obtained by purchasing these blocks of bonds in 1900, when very high prices were the rule, and in 1907, when nearly all good bonds are on the bargain counter, will serve to point a moral.

The table shows the cost of buying $5,000 of each bond at the high prices of 1900 and the low prices of 1907:

BOND	1900	1907	DIFFERENCE
N. Y. C. pref. 3½%.....	$5,550	$4,400	$1,150
Chicago & Alton 3%...	4,650	3,787	863
Rock Island gen. 4%....	5,487	4,700	787
Total.....	$15,687	$12,887	$2,800
Annual income.....	525	525	——

It is at once apparent that the investor who bought these gilt-edge bonds at the top, seven years ago, has been losing his capital at the rate of $400 per annum, while his income has been only $525 per annum. If he had to-day the $15,687 he invested in 1900, and were to divide it equally in purchasing the same bonds he bought in that year, his annual income from the investment would be $636 instead of $525. That difference might very well, in many cases, measure the difference between comfort and discomfort in living.

The bonds used in this illustration are not selected for any particular reason. What is

true of them is true practically throughout the whole list of gilt-edge bonds; that is, of bonds that are as close to being absolutely safe as one has a right to expect.

The moral that THE WORLD'S WORK desires to draw from this little market study is that the present is a good time for conservative investors to make investments. We do not believe that the strongest railroad bonds will decline from their present prices to any appreciable extent. We do believe that the general tendency during the next seven years will be upward, rather than downward. It is unlikely, in view of economic conditions, that the gilt-edge bonds will regain all the lost ground. Capital is likely to demand a larger return in interest during this time than it did seven years ago, because it costs more to live and is likely to continue to cost more to live. But the margin of possible recovery is very wide, and some of it will inevitably be absorbed.

This is a distinct change of advice given by this magazine. A year ago, after a full study of the bond market, THE WORLD'S WORK adopted a very conservative attitude, and was roundly criticised because it would not unqualifiedly advise the purchase of all good bonds by all kinds of buyers at that time. From that time to this, it has maintained that attitude. The average investor, looking for permanent investments that would not worry him, has been recommended to specific bonds that seemed to have reached a bed-rock level, or has been advised to purchase quiet, unlisted bonds on sterling properties, not directly exposed to the influences of the Wall Street market. The business man, and even in some cases the average investor, has been advised to purchase the best of the short-term notes.

The reason for this conservatism is now apparent. The early months of the year and the summer months brought it quite clearly to the eyes of even the most superficial observer. The scarcity of capital led to further declines in the gilt-edge bonds. The end of the summer brought symptoms of acute disorder in the market for money, as usual. The remedy is now in application, namely a curtailment of the more speculative demands for capital. Many millions of dollars that have been drawn out of investment in the last five years will return to investment, coming back from real-estate speculation, from business ventures, from building projects, and, possibly, from merchandising.

It is not the intention of this article to state that the gilt-edge bonds are the only bonds that may be bought to-day with expectation of profit and comfort. Middle-class bonds of the good railroads will follow the course of the gilt-edge bonds, perhaps starting a little later, but in general closely coinciding. Convertible issues made by really strong companies will probably be found even more profitable, though not so well adapted to the needs of the man who wants a permanent investment, without any of the elements of speculation. As to the more speculative issues, they follow the course of the stock market, and we do not recommend them to the average investor at all. For example, the American Tobacco bonds, while probably perfectly good, may be widely influenced by the course of the Government prosecution of that company.

Judgment should be used in making purchases of the best bonds, as well as the most speculative. If one intend to become a bond buyer, he should choose his bond-dealer very carefully. It costs no more to deal with an old, well-established, and thoroughly reputable house than it does to deal with a cheap broker, of unknown record. In the long run, it costs a great deal less. Make your connection with a house upon whose statement of facts you may rely, even though you get your advice elsewhere.

Instead of asking your broker for advice, ask him for facts. If, for instance, you desire to make an investment in gilt-edge bonds, ask him to send you a list of the bonds he has for sale that are legal for New York or Massachusetts savings banks. Almost every reputable house, either in New York, Boston, Chicago, St. Louis, or even the smaller cities, has some bonds for sale that meet these qualifications. At the same time, ask for a brief record of the prices of each bond. He can get the figures over the last ten years by a consultation of records that will not take five minutes of time. You might have to spend a week in writing for them, or a day in consulting some library.

When you get his little list, you will have data from which to form an intelligent conclusion. If you want to invest in only one bond, pick out the one you want after a study of the prices and the facts. It is not always wise to select the one that is selling nearest the low price of its record, but that is a fairly safe general rule in dealing with the bonds

legal for New York savings banks. It is not quite so safe in dealing with convertible bonds; and it may lead to dire trouble in making investments in the speculative bonds.

If you have enough money to buy five or six bonds, or more, diversify your investment. If you want the revenue of the bonds to live on, you might take, let us say, six bonds, all of equal class. Take one that pays its interest in January and July; another that pays in February and August, and so on, through the year. It is generally convenient to have your revenue coming in month by month. If, on the other hand, you want to reinvest the interest, buy bonds that pay at the same time. This is a minor matter, and one that every buyer may settle for himself, with the help of an intelligent broker or bond salesman.

I know one man who owns a good business, giving him a certain income year by year. He estimates that he will never, in his lifetime, need the income from his investments. He therefore entails it, to increase the amount of his investments at his death. He buys bonds, only of the best class. When the income from his investment reaches a certain figure, he takes out life insurance on a "straight-life policy" whose premiums will exactly absorb the interest from the investment. The process might be varied, in the case of a man thirty years old who wants to retire at fifty, by making his insurance a 20-year paid-up insurance. It is not a very scientific process but is merely interesting.

A thought may here be given to the man whose investments are fairly large, say as much as $5,000 per annum. If he lives in a city that is visited by the salesmen of the big banking houses, he will probably find it both profitable and pleasant to make a connection with one of the houses whose agents visit his city. As a rule, the same salesman covers the same section year by year. In nine cases out of ten, he is a man worth knowing, and whose knowledge of bonds is quite as much at the disposal of the customer as of the banking house. Get him to come and tell you facts. A handful of his facts about the bonds, the property, the men who control it, is worth a bushel of his theories about the market.

Let us go to the other extreme, the man who has never made investments in securities. This magazine receives quite a number of letters from people who want to know how to select a banker, and how to use him when selected. In this matter, base your judgment on the record of his house. So far as the New York, Boston, Chicago, St. Louis, Philadelphia, and Pittsburg bankers are concerned, advice may readily be obtained for the asking. When you are satisfied that you know which house you want to deal with, simply write to it, stating in a few words what kind of securities interest you, and, approximately, what amount of money you are thinking of investing. You need not think that the big banker does not want your business because it is only $500 or $1,000 a year. He does want it, and in nine cases out of ten you will get the same consideration from him that he will give to the man with ten times as much. If you don't, find another banker.

ENGLAND'S OVERLAND MAIL

HOW LONDON SENDS ITS WEEKLY LETTERS ACROSS THE WORLD TO INDIA

THERE is one continuing miracle in modern days which never receives a moment's other attention or recognition than that which is implied by the inevitable grumble when the miracle does not come off. It fails only once in a million times, an average which it would be hard for the most immaculate of Mahatmas to beat. I mean the weekly mail from London to India.

Punctually at nine o'clock on a Friday night the train swings slowly out of Charing Cross, and two hours later the tonneaux containing the mails have been swung on board the cross-Channel steamer, and the lights of Dover are gradually drawing together in the darkness beyond the white hubbub of the ship's wake. Forty minutes are wasted at Calais, and then at one in the morning "the Continental Express" — perhaps the most famous train in all Europe — begins its long journey. This is a *train de luxe* which sweeps across Europe, disdaining alike the waiting crowds upon the

platforms of the most famous of cities, and the frontier investigations of the custom houses.

SWEEPING ACROSS EUROPE

Serene and self-contained, the express makes its way through the night. It even dares to put Paris on one side, and all unconscious between the sheets you spin through the long levels of France until, an hour before you reach Dijon, you turn up for your *café complet* in the dining-car. During luncheon you halt at Aix-les-Bains. Soon after, you climb the steep ascents of the mountains, and hard by Modane you thread noisily the dark culvert of the Mount Cenis Tunnel. Twenty-four hours after leaving London you are in Turin, and then again in sleep you lose all sight of the plains of Lombardy. If you are an early riser you may catch sight of Ancona and the bright blue waters of the Adriatic as you wake, but you may save yourself the trouble. For the remainder of your journey, except where by Foggia the tag of Italy's boot thrusts itself out into the sea, you will never be more than a mile from its dancing waves. One after another the little half-known maritime towns of Eastern Italy submit themselves for your momentary inspection, and are then wiped away again under the fast wheels of the express. At last, just when you are feeling ready for an early dinner as a diversion, you stop at Brindisi. There, after a good dinner, you may idle upon the black and white stone quays, and watch the colored lights rippling across the harbor.

All this time, with a paradox characteristic of this country, the "mail-train" has not carried a single mail-bag. The mails, far more precious than the human passengers, have followed behind the sleeping-cars all the way. Even an outgoing Viceroy takes his passage on what is, to all intents and purposes, only a pilot train.

TRANSFERRING THE MAIL TO STEAMER

The arrival of the mail-train at Brindisi is a signal for the springing up out of the darkness of five hundred strange porters of every race and language in Europe. They carry across the dingy but all-precious mail from the coaches on the quay to the black, quivering body of the trans-Mediterranean greyhound that is waiting for them at the quay-edge. One after another, in a continuous stream for two or even three hours, the bags are carried up the inclined planks, divided right and left by the officer in charge, and dumped down into the holds.

At twelve o'clock the *Isis* is off. Nominally the journey takes forty-eight hours. I have generally found it more like fifty-four, and I should have been glad if we and the mails — I mean the mails and we — could have been transferred at an even later hour to the big P. & O. that is moored fifty yards out from the tank of that strange, flat, over-built peninsula, Port Said. Through the Canal we start on Wednesday at nine, steadily gliding on from dawn to sunset; afterward it is only possible to see our way by the searchlight slung at the prow. Four days of the Red Sea will have inured the worst sailor for the five days more between Aden and India. At last the mountain ranges of Bombay rise up out of the deep ahead, and we have reached our goal. From Aden to Bombay the mails have been sorted all day long, and at Bombay the English mail comes to land only to burst rocket-wise over the length and breadth of India. It is a pretty idea, this of the English mail thus spreading its English news and kindly greetings to every part of the great dependency.

SEPARATING THE MAILS

This bag with the black and white bands remains in Bombay, the gate and meeting-house of half the East; that presses north the same day to the dainty mosques and silk factories of Ahmadabad. These others are coursing on in the same direction. Some will fall out at the coral city of Jaipur. Others, even earlier, will be making their way to the lonely and magnificent desert palace and city of Jodhpur; this one's destination is uttermost Bikanir; this again will find a home in lovely Udaipur, where the white marble palaces rise straight out of the blue waters of the mountain lake.

But the main current keeps on through Delhi, with its memories of past dynasties and emperors more gorgeous and more extravagant than any the rest of the world has ever known; through Amritsar and Lahore, the sacred centres of the Sikhs; through Rawalpindi, where the massed battalions are ever waiting; over the Indus at Attock, up to Peshawar and through the long, low Khaibar Pass to Landi Kotal, the *Ultima Thule* of English authority in India.

THE MONDAY LETTER FROM HOME

Others, again, run through from Bombay to the rocky fortress of Gwalior or to Agra, where rise the most exquisite of all India's

homes of the dead, the incomparable graves of Akbar, Itmad-ud-Daula, and, last and best of all, the Taj. Perhaps we must reckon the fort of Agra and Fatehpur-Sikri as homes of the dead in no less real a sense. But all are exquisite, and in every one of them an English letter is read each Monday in the year. But the great body of the mail still runs on eastward. East through Cawnpore, of which the Englishman still speaks in bated tones, to Lucknow; east past Benares, the holiest city of all India, eastward still through the hot, streaming jungle swamps among which Calcutta has made firm her foundations, or up the jungle clad spurs of the Himalayas to Darjeeling.

And yet this is only part of the work of the mail. While the first letters are being opened in Ahmadabad, the southern mails are speeding fast to Hyderabad, Madras, and the hot steamy jungles of the Carnatic. And still there is Burma awaiting its mail-bags on a Wednesday afternoon; still our resident in Gyangtse looks southward for the mounted dak.

There is no corner in all India that is not searched out and found by this almost perfect service which, unnoticed and unpraised, is carried out week after week, from year's end to year's end. Those who have known in even the most casual way of the work that is thus steadily and unostentatiously done by the Indian Mail Service, will be the first to admit that it is in no spirit of irony that at the outset of this article I have called it a miracle. And, roughly speaking, wherever the mail goes, there can an English visitor go too, as quickly and as well.

TAFT: A CAREER OF BIG TASKS

V.

AS SECRETARY OF WAR

BY

EUGENE P. LYLE, JR.

SECRETARY TAFT has held appointive offices almost without interruption, and without seeking one of them. Yet had he sought them by election, he would probably have had them all. In a constantly widening circle, the confidence in him and his work has spread; and when he accepted the call to the War Department, he had behind him a practically unanimous public opinion. When he went out to the Philippines, he was known in Ohio as a great lawyer. When he came back, the whole country knew him as an exceptionally great administrator.

Secretary Taft generally laps over an official title, and a popular one must be created for him. "The Wheel-Horse of the Administration" serves admirably, but "General Utility Bill" is more striking. Instead of the President putting up a "Busy Day" sign, he says, in effect: "Go over and tell Taft about it." That is the way the President gets his vacations, and sometimes the Secretary of State, as well. They can leave Washington confidently if Secretary Taft is "on the lid."

Whenever he is Secretary of Peace *pro tem.*, the Secretary of War fairly exudes "cordial relations." There are no dilemmas in his vocabulary. When the Kaiser asks us what we think of France in Morocco, Secretary Taft replies that we don't think anything of it. Why should we? Morocco is nothing to us. And so, a diplomatic question untangles itself into a genial international smile. And, all the while, he is the jolliest of War Lords. Bristling is not one of his methods. It never seems to be necessary.

There are correspondents in Washington, men who come in contact with him daily, who would be surprised to hear that the Secretary can really swear. They have never seen him angry, and decline to believe anything of him that is not even-tempered. He rarely shows a sign of strain, or loses his temper. Last spring, just before his trip to Cuba and to Panama, he had an unusually exasperating time. He was bearing the brunt of censure loaded by Congress on the Administration. He was working hard for the Philippine tariff and bank

bill. The Canal was again at the acute stage of periodic resignations, from chief engineer down. There were the bids for the work to be considered. There was the Brownsville affair —the only item of all this docket that was strictly Department business—and, on top of it, came Senator Foraker's nettling attack. There was Cuba in a state of disorder. And, all the while, men waited twenty deep outside his door, and each man had a new difficulty to "tell Taft" about. At last the big, good-natured Secretary began to show signs of nervousness.

"What, *that* fellow!" he would burst forth. "Blot him from the face of the earth! Why—" and then, at the very height of the outburst, he would break into laughter, and everything was all right again.

For a time of peace, the Secretary of War is a very busy man. His Department has in hand tasks that overshadow those which usually go with the office. The War Department is building the Panama Canal. It nurses or chastises dependencies. It discourages repudiation and revolution in Latin-America. Compared with these, the routine of army affairs is not picturesque. The army, an instrument of war, gets itself lost in any casual record of the present Department of War.

The dominating quality of Secretary Taft's usefulness as "the Wheel-Horse" is tact. That is why the President sent him to settle a Cuban revolution without powder and ball. As in the Philippines, he steered clear of traps. The Cubans could worry no rash promises out of him, but were made to see that their lost independence might be regained only through their own good conduct. They understood that they must have a peaceable election, and that we do not wish to stay on their island any longer than necessary. Secretary Taft goes to the bottom of an insular broil. By sympathetic insight, he understands—and then it is all over with that particular revolution.

He has also a penetrating and comprehending eye on the Panama Canal. With no reference to notes, he explains the technical phases that one would suppose only an engineer on the ground could handle. It grows evident in a little while that he has mastered the entire situation. When he makes an estimate on the time and cost of taking out earth, he knows exactly the kind of earth it is, and allows for difficulties that even a geologist might not foresee. He has at his finger-ends the same exact information about the tangled problem of trackage and dumping. He knows what the men eat, and how they live. He has been a veritable spendthrift of effort.

AS A CABINET OFFICER

As Secretary of War, one of that little group highest up in the Government, he is not different from "Old Bill" of the prosecutor's office in Cincinnati. He is a few years older, but not a day more exalted, not a day less hearty and unassuming. His face breaks into a smile as he greets an incoming group. His voice is soft, but not insinuating, and with never a hint of affectation. Neither is there the least cadence of the oratorical, nor the solemn intonation of the learned exhorter. It is all perfectly natural; most of all, it is considerate. Yet, as he grows more earnest, the voice gathers volume and you feel the reserve force behind.

The Washington newspaper correspondents — and they are experienced judges of human nature — describe Secretary Taft as very "human," which is possibly the best thing a newspaper man can say of anybody. They are genuinely fond of the Secretary of War, because he is so real. The crabbedest among them, veterans who have inventoried statesmen almost since the day of Lincoln, will tell you that Secretary Taft is the kindest man they have ever known in public life.

For a civilian, Governor Taft came to the War Office with unique qualifications. During more than three years he had lived near the American soldier, when he and the soldier were both seeing actual service in the Philippines. He knew our fighting unit already, by personal contact. He has studied details since then, all the way to high strategics. He understands the troubles of the enlisted man, and favors probationary enlistment to offset desertions. He urges a tight chain of insular defenses, as a precaution. He inspects army posts, all the way from Fort Russell in Wyoming to Fort Sam Houston in Texas. He wants brigade posts, wherever possible, to give officers actual practice in handling large bodies of men. "An army is not to look at," he says; he wants one that can fight, believing this to be "the most effectual means of preserving peace." But a task like that requires time, and he warns us frankly:

"If we once raised such an army as we did raise, the flower of which marched down Pennsylvania Avenue in

the grand review under Grant and Sherman, could we not do it again? In the enthusiasm of these glowing questions and periods, the awful sacrifice of life and money which we had to undergo during the four years in order to train our Civil War veterans and to produce that army, is entirely forgotten, and the country is lulled into the utterly unfounded assurance that a volunteer enlisted to-day, or a militiaman enrolled to-morrow, can in a week or a month be made an effective soldier. More than this, the fact that in the Civil War each side labored under the burden of having to use raw levies at first, while in any foreign war we might have our troops would have to encounter at once a trained and disciplined force, is entirely ignored."

THE SECRETARY OF WAR

And then he adds this word of caution:

"The lesson from the pension fund, however, instead of being, as it naturally is, a restraint upon expenditure to secure an efficient army, ought, if historically and critically considered, to be a warning against the lack of preparation, for the extent of that pension roll is itself the greatest exponent of the fatuity of a policy of insufficient national defense."

AS A PRESIDENTIAL CANDIDATE

When Secretary Taft returned from one of his insular trips last spring, he found that he was a candidate for the Republican nomination for the Presidency of the United States. It was his half-brother, Charles P. Taft, who had put the pot on, and the fury of its boiling promised active political work in Ohio. Senator Foraker thundered defiance and said that he would submit the question of the state's choice to direct primary. This was agreeable to Mr. Charles P. Taft. Everybody in Ohio knows that Senator Foraker could be elected to nothing by direct primary, while in Cincinnati they say that Secretary Taft is virtually without an enemy. The Senator did not insist on the direct primary, and the "organization" was left to decide the matter. Wisely choosing between a standard-bearer who fears a direct primary and one who fears it not, the Republican State Committee declared for Taft.

As a candidate for the Presidential nomination, there is never any compromise of Secretary Taft's straightforward simplicity. Recently he told the Republicans of the South that, so long "as the Republican party in the Southern States shall represent little save a factional chase for Federal offices in which business men and men of substance in the community have no desire to enter and in the

result of which they have no interest, we may expect the present political conditions of the South to continue." Now the votes of the Southern Republican delegates are many, and may be the decisive votes in a national convention. The Secretary had no political reason for saying what he did, and there were reasons why he should not say it. But, as usual, he said exactly what he thought. Yet such are the contradictions of politics that a candidate's "frailty" often becomes a source of strength; only a little while after the above denunciation, a Republican state convention in Kentucky virtually declared for Taft.

Secretary Taft believes the tariff should be revised, and he first said so when such an utterance was akin to party heresy. This "frailty" was acclaimed as an excellent one, especially since certain candidates already in the field were monotonously hide-bound in the doctrine of "stand-pat."

His labor decisions, referred to in a former article of this series, will be urged against him. Last spring he again offended Labor, because it was in the wrong. This was the case of the steam-shovel men, down on the Isthmus. The other workmen on the Canal thought that the demands of the shovel-men were unreasonable. The Secretary said that he would investigate their complaints. But this did not suit the grievance committee that waited on him. It must have instant compliance, or there would be a strike.

"Do you mean to tell me," demanded Mr. Taft, "that you want my decision before I have had time to inform myself?"

SECRETARY TAFT STARTING ON A ROUND OF INSPECTION IN THE CANAL ZONE

Yes, they did, or they would at once tender their resignations and stop work on the Canal.

"Then," replied the Secretary, "if I must decide without looking into the matter first, I shall have to request your resignations at once."

The committee looked at him amazed. It was hastily resolved that the unintimidated Secretary might have more time. He later found the shovel-men to be well paid, better paid than other labor on the Isthmus or than the same labor in the United States. He disapproved any further increase, "except under some provision of reasonable increase

applicable to all veteran skilled employees of the Commission who are paid by class rates."

Corporations who break the law are given leave to regard him with the same aversion as do the lawless of any other class. Though he is in accord with the President's policies, his friends do not believe that he would attempt the "radical" things that President Roosevelt has done. Being a lawyer, he would draw back before any "Constitutional sacrilege." Yet, on the other hand, he would be as radical as any policeman toward corporate power that does not respect the law. For instance, he says:

"It is readily conceded that the prosperity of the railroads plays a large part in the prosperity of the country, and that anything which disturbs their normal and proper income will disturb the business of the country; but what has that to do with the question whether there shall be an efficient tribunal to determine whether a railroad company is charging too high rates, or is discriminating against some individual or locality?"

And then he adds:

"Perhaps the most serious abuse of the last two decades has been the unjust discrimination in railway rates as between individual shippers and as between different localities; and indeed, in some instances, by rates in excess of that which would be reasonable for the service itself."

Before Mr. Roosevelt became President; before either "the Square Deal" or the Rate Bill were heard of, Judge Taft was hauling railroad receivers before him to answer to charges of rebating, and also writing a decision that broke the first trust ever broken by Federal law in our country.

Again, there is so delicate a thing as religion, and it is feared that the blindly pious, unable to see the Christian spirit behind a creed not their own, will be arrayed against him by subtle manipulators. Secretary Taft is a Unitarian. No one in his camp admits, though, that for this reason the Christian spirit may not be alert in him. When his old classmates gathered around him just before he sailed for Manila the first time, he revealed his attitude toward his errand in these words: "I have some hesitation in saying what I am about to say, for I know there are some real missionaries in this company, and I may mistake the emotion; but I sincerely believe I have the missionary spirit. I know I want to do those people good." Previous to this there was a

SECRETARY TAFT INSPECTING QUARTERS AT GATUN, CANAL ZONE

movement started to make him president of Yale, which he discouraged, but to an old friend he said, very earnestly, that he knew of no greater opportunity that could be offered in the work for righteousness. Another time he said: "I would not ignore or minimize the influence of religion on the development and uplifting of human character."

The Secretary's friends may wish that the people knew him better. Yet one does not have to know him to judge him. He awakens the abiding trust of his fellows by his frankness and his sincerity. Even where he is not personally known, there is the feeling that Secretary Taft is a public servant who can be depended upon for any kind of a job.

President Roosevelt's own estimate of the Secretary of War is not overdrawn. Mr. Taft, he says, combines as few men ever can combine, "a standard of absolutely unflinching rectitude on every point of public duty, and a literally dauntless courage and willingness to bear responsibility, with a knowledge of men and a far-reaching tact and kindliness, which enable his great abilities and high principles to be of use in a way that would be impossible were he not gifted with the capacity to work hand in hand with his fellows."

When he shall have returned from his visit to the Philippines, he will have traveled an almost incredible number of miles on government business. Outside of the Navy, no other American has traveled so far in the public service. But he has gone far in another sense. From his graduation until now, his fiftieth year, he has not worked—for himself—at his profession more than perhaps six months all told. The years have all gone into the public service, just as the unthinkable miles of travel have gone with the character of the service as varied as that of the countries he has traversed.

This, then, is his equipment as a public servant. "He has had the extraordinarily severe training for the highest service of the nation that possibly not one of our Presidents has ever had."

THE SECRETARY AWAITING HIS TURN TO ENTER A SHAFT

There is no detail of canal construction with which he did not acquaint himself

(*Concluded*)

THE MONEY-KINGS

II.

WALL STREET AND THE BANKS

BY

C. M. KEYS

MR. JAMES STILLMAN

TO-DAY, in his fifty-seventh year, Mr. James Stillman is president of the biggest and most powerful bank in the country. He is also the plenipotentiary in the strongest group of banks. When he became president of the National City Bank, it had a capital of one million dollars; now it has a capital of twenty-five millions. In those days, it had deposits of about twenty millions; now it has upward of $160,000,000 of individual deposits. Then it stood alone; now it is the head of a banking oligarchy embracing, in all, nine national and six state banks, and at least six trust companies.

This whole system, if one may call it so, is operated on what might be called "the Stillman idea." It is a banking heresy. In effect, it is that a commercial bank may depart widely from the pursuits of commerce and lend itself largely to the uses of the promoter, the financier, and even the stock gambler. Little is esteemed to be beyond the province of the bank. It may properly discount commercial paper, promote a huge copper consolidation, finance a mining deal, or trade in bonds and stocks in almost any way it pleases.

Some thirty years ago, this same heresy crept into the banking business in England. At that time, the firm of Baring Brothers was, perhaps, the largest single commercial bank in England. It had been built up by generations of conservative business, slow, steady, certain. When Lord Revelstoke inherited its command, he was fascinated by the glitter and the glory of promotion. He saw huge fortunes made in South America, in the financing of huge mines, and in all other forms of financial promotion. Deliberately, he turned the policy of his house from the hard-tilled fields of commerce to the rich fields of exploitation.

MR. GEO. F. BAKER

For ten years, winds blew fair. By 1890, the firm was one of the largest dealers in securities, and was loaded to the gunwales with the scrip that represented the development and exploitation of the Argentine Republic, among other ventures of the same sort. Then came the tempest, suddenly. To the utter amazement and confounding of the financial world, Baring Brothers hung out signals of distress. Help came, and the firm struggled on, under bare poles, distressed and crippled.

The lesson of the Baring catastrophe was not, one may presume, lost upon Mr. Stillman, the new president of the National City Bank. Yet, with his eyes wide open, he deliberately chose for his bank a course similar to the course that had resulted in the Baring panic. Only, he watched, coddled, and guarded his bank with the most assiduous care. Each step in its progress was guided by his hand. His genius, his marvelous intuition, his wonderful adroitness have been at all times at the call of his bank. Therefore, thus far, mistakes have been few, profits have been large, and banking power has more and more been concentred at the desk of Mr. Stillman.

He is, in truth, the First Apostle of Concentration. When he was born into the banking world, each bank was a separate entity. The

National Bank Act had stipulated that each national bank should have "one place of business"; and the simple-minded fathers of the system had taken that to mean that branch banks were not desired, nor desirable. The new president of the National City, however, was a dreamer of practical dreams. He began to picture his little million-dollar bank as the conqueror, the emperor, of all the banks. It was a time when trusts were in the making. He pictured to himself a banking trust, but he could not make the picture fit into the scheme established by the law. Therefore he sought a winding path that should run through the law, yet not transgress it. He found that path and follows it to-day, carefully, advisedly, shrewdly.

Instead of establishing branch national banks, impossible under the law, there has been created a system of dependencies. Here, the interests that centre about the National City Bank have bought control of another bank; there, they have merely made an alliance and exchanged directors; here, again, the tie is even more elusive and intangible. The Hanover National Bank coöperates closely with the Stillman policies, and Messrs. Stillman and William Rockefeller are directors of it. It is the left arm of the system, so to speak. Mr. Stillman is a director in eleven banks and six trust companies in New York City.

Of course, the process of consolidation by these means has not been confined to Mr. Stillman's banks. Mr. J. P. Morgan, the greatest of all promoters, has not lagged far behind. For years he has been recognized as the real dominant influence in the Bank of Commerce, and has had a working alliance with the First National Bank, of which Mr. Geo. F. Baker is the president. These two banks stand at the head of the second largest group, consisting of five national banks and eight trust companies. It is not to be assumed that they are so closely related as are the City Bank and the Hanover Bank, but they are loosely allied. The third big bank in this group is the Chase National, strongly allied with the First National. In the third group, the National Park Bank heads a list of five banks and trust companies, mostly doing a commercial business. This group has not followed the usual practice of diverting its activities from

THE BIRTHPLACE OF MR. JAMES STILLMAN, AT BROWNSVILLE, TEX.
It is now occupied by the local agent of the "Gulf Coast Line"

Photograph by Brown Bros.

THE NATIONAL CITY BANK, NEW YORK

"You will find the heart and centre of this plutocracy in the middle of the western edge of a flat-topped desk located in a small office in the southwest corner of the second floor of a little, white, unpretentious office-building halfway between the graveyard that bounds Wall Street on the west and the deep dark river that skirts it on the east"

commercial banking to financial banking. The fourth group combines the interests of Messrs. Morse and Heinze to control half a dozen national and a dozen state banks, and five or six trust companies.

It must not be taken for granted that all the New York banks are affiliated with these groups, or that all have turned from commercial banking to other phases of the science. There are many strong, growing, enterprising, independent banks that are still handmaidens of commerce. The Chemical National might be cited as a type.

It will be seen immediately that the two real

fighting factors in Wall Street banking are the groups headed by the City and the Hanover National, and the group formed by the loose coöperation of the First National and the Bank of Commerce. The first of these groups is the so-called "Standard Oil Group," closely allied with the financial interests of the Rockefeller family and ready, in general, to coöperate with Messrs. Kuhn, Loeb & Co. in furthering the interests and carrying on the activities of Messrs. E. H. Harriman, H. C. Frick, H H. Rogers, and their allies. The second group is subject to the influence and policies of Messrs. J. P. Morgan, James J. Hill, and the Moore clique, which controls the Rock Island. This group, like the former, has its allies in the field of private banking, namely, Messrs. J. P. Morgan & Co., Speyer & Co., and other smaller firms.

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THE BANK OF ENGLAND

The headquarters of the English financial system is, and must for years continue to be, the real money-centre of the world. Its rate of discount largely controls the ebb and flow of gold in all markets

There is nothing essentially pernicious in

a banking consolidation, nor in concentration. In fact, concentration in banking was almost inevitable, as it has been the ruling principle of the last ten years in almost every line of business, here and abroad. It tends toward strength. It was this principle that made the Baring firm great and powerful before Lord Revelstoke formulated the heresy that wrecked it. No one decries concentration, for itself.

Yet, harm has been done by the concentration of banking interests in the forms above described. The Stillman idea carried with it, and carries with it to-day, quite another factor than the mere concentration of banking power to carry out the behests of commerce. This second factor lies in the now undoubted fact that as the banking power has been concentrated it has also been more and more diverted from commercial pursuits into the more alluring, swifter, and much more dangerous pursuits known as promotion, financing, and speculation.

It is as well to outline the field covered by the term "banking." It is a wide field. In the main, it has three phases: commercial banking, investment banking, and financial banking or promotion.

Commercial banking is seen at its best in the national and state banks. The former are about 6,500 banks, scattered over the country. They are regulated and inspected by the Government at Washington, are authorized to issue notes secured on Government bonds and thereby furnish a supply of money for commercial needs, and are generally designed to be the handmaidens of commerce. The state banks are similar, but are under state laws and issue practically no notes. These two groups of banks, nearly 15,000 in number, are supposed to live largely upon the discounting of notes for the farmers, merchants, manufacturers, and others who do the business of the country. In general, they are not chartered for the purpose of dealing in real estate, stocks and bonds, or any other form of fixed capital.

THE BANK OF THE FUTURE

Photograph by Brown Bros.

Mr. Stillman has aspired "to found his bank (the National City Bank), at last, in the old Custom-House, the great stone-pillared pile into whose shadows his eyes look as he glances from his windows across the dusty street, and make that bank the Bank of All the Banks. Perhaps he will do it"

Photograph by Bown Bros.

A CENTRE OF HIGH PRESSURE

Within this area, some of the fiercest financial battles have been fought. It includes the offices of J. P. Morgan & Co. (beneath the cupola in front), H. B. Hollins & Co., the Sub-Treasury, the Hanover National, the Bank of Commerce, and the Equitable Building (in which Mr. Harriman has his office)

Trust companies and savings banks make up the bulk of the investment banking. The former were originally designed to administer estates, make investments for people, certify mortgages, and do a general trustee business. Latterly, they have widened their field so that they do most of the things any other bank does, and some things that no other bank can do. It is not at all infrequent to find a trust company in New York discounting notes in one department, administering estates in another, dealing in foreign exchange in yet another, handling margin accounts for customers, acting as a money-broker, and conducting a department where people may purchase bonds for investment. It is largely on account of the wide power of the trust companies that they have been sought by the consolidations of banks.

Savings banks are strictly investment banks. They are supposed to take the savings of the people and invest them. In most states, the investment is strictly prescribed by law. In New York, these banks cannot do any discounting of commercial paper, such as the state and national banks can do, but they can loan a small proportion of their cash to national banks and trust companies. On account of the rigid laws in New York and on account of the fact that the savings banks are "mutual" —that is, are controlled by their depositors— there has been very little tendency to exploit them for private gain. Few, if any, of them are directly controlled by the great groups.

BANKS THAT ARE NOT BANKS

The promoter is not usually a banker, but the promoter and the banker work together. The proper place for promotion and banking to come together is the office of the private banker. He is supposed to be an individual who handles great funds of money for business people, his partners, his friends, himself. His profits are naturally immense, as his risks are enormous. Promotion is simply and solely a business enterprise, with all the natural risks that attend such enterprise. A subdivision of the promotion is stock-jobbing and bond underwriting. These are phases of the science of private banking.

Under the old régime, these subdivisions of the banking business were unmistakably marked. Within the last fifteen years, these carefully drawn lines have been obliterated, so far as the New York banks are concerned. We have seen the whole machinery of the National City Bank thrown into the flotation of the Amalgamated Copper Company; and the First National a maker of the market for Reading stocks in Wall Street. A trust company was specifically created under New

THE NATIONAL PARK BANK, NEW YORK
It heads a group of five banking houses, but the bulk of its business is commercial

York laws to assist in the financing of the United States Shipbuilding Company, and reorganized within two years when that company collapsed. Time and time again, great national

Photograph by Brown Bros.

THE FIRST NATIONAL BANK, OF NEW YORK

'ou may stand near the tomb of Alexander Hamilton, the father of our financial system, in Trinity ırd, and look into Wall Street. On the northeast corner of Broadway and Wall stands an old, stained ; of red brick and brown stone. That is the First National Bank"

in the two groups have been coupled private bankers in offering for sale of bonds underwritten. No man has not known Wall Street can realize ınxiously the speculative public watches arket attitude of the National City and irst National Bank of New York.

On March 14, 1907, there was a so-called "panic" in Wall Street. Stocks dropped suddenly—five, six, ten dollars a share. At the bottom, there appeared some remarkable buying. Huge blocks of stock were taken in the market, apparently without fear and without the slightest hesitation. The market

turned about, and a rally followed. People guessed that some great financiers had come to the help of the market.

It happened that the writer saw a privately circulated statement, dated March 20th, showing the condition of one of the big national banks in Wall Street on that date. The bank is supposed to be a commercial bank, and not an investment bank. On that date, six days after the panic, the statement showed that it owned $57,000,000 worth of "stocks and bonds." Its commercial loans, in the form of discounts, were practically nothing. Nearly 90 per cent. of its available assets were invested in these "stocks and bonds or loaned on Wall Street collateral." The statement did not show what the stocks and bonds were but I was assured, and believe, that nearly $50,000,000 of that item consisted of active, listed stocks, bought mostly at the time of the panic, to be sold again as soon as the market would take them without trouble.

That, it is hardly necessary to say, is not banking. It is stock gambling on a gigantic scale. That bank, on and about March 14, 1907, was nothing more nor less than a blind pool, operating under a charter granted by the United States Government to do a commercial banking business. The whole affair was utterly in defiance of the Federal law to regulate national banks. Moreover, this bank controls a group of banks. At that time, it called in from all possible quarters all the cash it could command. To enable it to buy those stocks, funds were called out of commercial pursuits in nearly every section of this city.

This illustrates the worst phase of the banking method, as practised in Wall Street and elsewhere in New York. When the market in Wall Street is a natural market, running along without stimulation, it is not an evil. It does not drain away commercial money to any great extent, but merely takes up the surplus or calls in for investment the money hoarded away in vaults or hidden in corners. But when there is an artificial market, kept alive and humming by the operations of huge pools or by the pernicious attempts of banks or private individuals in command of banks to make a market for securities in which they have an interest, it draws away not merely the surplus but also a large part of the funds that otherwise would be used in commerce. For the great central banks call upon the commercial banks for cash, and get it: or sometimes they put up the rates in Wall Street to a point that business men cannot pay, and so divert into the market the funds of banks perfectly honest and well-intentioned in themselves.

THE EVIL OF WALL STREET CONTROL

I remember the case of a young Westerner who accepted a position as vice-president of a trust company, controlled by a larger trust company, in turn controlled by one of the great Wall Street banks. He came on to New York, induced some of his business friends to

ENTRANCE TO THE CHASE NATIONAL BANK, NEW YORK
This bank is one of "The First National Group"

open accounts with the trust company, and settled down to what he conceived to be a life of banking usefulness. In time, the president went to Europe for a rest, and the vice-president took command. He discounted paper for the customers, loaned funds to good people on good security, and kept at all times a comfortable cash surplus in the bank.

One morning, he was called to the telephone. The man on the other end of the wire was the cashier of the larger trust company. The conversation ran something like this:

"How much cash have you on hand, Mr. A——?"

Photograph by Brown Bros.

LOOKING WEST (TOWARD TRINITY CHURCH) FROM THE CITY BANK OF NEW YORK

Within the circumscribed view we may catch glimpses of half-a-dozen national banks, as many trust companies, and half a hundred private banking offices doing the bulk of the money business of Wall Street

"About $250,000, I think."

"I wish you would send me over about $200,000 of it. The bank is asking for it."

"I don't think I can do it. Our discounts are pretty heavy right now, and I guess I shall want all the money I have. In fact, I am figuring on borrowing some at the end of the week."

"Well, you know the way it is. They are getting 18 per cent. downtown, and money is scarce. I have no orders about it, but am just asked to find out about it. I think it would pay to come down."

He declined again. Twenty minutes later, the cashier of the larger bank called him.

"Mr. Y— tells me," he said, "that you can spare us $200,000. I wish you would send it down by messenger."

"I don't see how I can get along without that money. Our customers count on us, and it would cause some feeling around here to fail them."

"Now look here: a bank is not a philanthropic institution. We can get 20 per cent. right now for that money, and it doesn't seem common sense to loan it at 6 per cent. I think you will see that it is better to send it down, even if you have to borrow later to meet your discounts, the necessary ones."

The money went down. Two weeks later, the Westerner went back to the West, where, as he says, "a bank is a bank, not a runner for Wall Street."

Photograph by Brown Bros.

THE INTERIOR OF THE REMODELED NATIONAL PARK BANK, NEW YORK

If this were an isolated example it would have little significance, but it is a well-known fact that it is not an isolated example. It is merely a perpetual phase of the banking business as practised in New York. There are two dozen of the smaller banks and trust companies in this city whose main function is to receive deposits and pile up surpluses which may be called by the larger

Courtesy of The Bankers' Pub. Co.

THE OFFICE OF A NEW YORK BANK PRESIDENT

The private-office of Mr. A. Barton Hepburn, of the Chase National, is much more elaborate than that of Mr. Stillman, or Mr. Baker

banks of Wall Street, and which are steadily so called.

HOW NEW YORK BANKS USE MONEY

I do not mean to intimate that all the resources of the great trust banks are devoted to the uses of speculation. That is a charge frequently made by irresponsible writers, but it is very far from the truth. The following figures, taken from the report of condition on August 22, 1907, will serve as a text from which to form a judgment with regard to the leading banks:

CONDITION ON AUG. 22, 1907

BANKS	LOANS AND DISCOUNTS	STOCKS, BONDS AND MORTGAGES
National City	$119,532,000	$25.695,000
Bank of Commerce	109,200,000	12,905,000
First National	37,619,000	53,115,000
Chase National	36,879,000	11,965,000
Hanover National	47,021,000	2,774,000

These two items are the chief items that show how the banks use the money they receive. The "loans and discounts" are either commercial paper or money loaned to borrowers on collateral. In a small country bank, nearly the whole of the money is normally used in making discounts. The proportion tied up in stocks, bonds, etc., is extremely small.

It is entirely different with the big banks in New York. For instance, the item of $109,200,000 loans and discounts for the Bank of Commerce probably represents largely loans made on collateral, either to companies or to individuals. The stocks and bonds of the United States Steel Corporation, of the Southern Railway, of the Erie Railroad, and of all the other Morgan companies, and the stocks and bonds of the companies controlled by Mr. Thomas F. Ryan are acceptable as collateral in that bank, because Mr. Morgan and Mr. Ryan are the dominant directors of the National Bank of Commerce. In the same way

the National City Bank made Amalgamated Copper stock suitable for collateral, even when it was nothing but a promotion gamble. In that way, it helped to float the stock. The First National Bank is glad to make loans on Rock Island stocks and bonds, or on the Hill stocks. If it had not been for the light of the countenance of Mr. Baker and the First National, the Rock Island flotation might not have been possible.

In addition to making great loans on the Wall Street stocks and bonds, thereby making speculation and brokerage business easy, the trust banks use a good deal of money in making loans directly to the trusts, either on collateral or in the form of discounts. In the old days, when the business now done by the Steel Corporation was handled by a host of small separate companies, these little steel companies were among the best customers of the local country banks. They used to come in and get their 30-day, 60-day, or 90-day paper discounted at good, fair rates, and the country banks counted them among the best of their customers. When they were combined, this practice ceased. To-day the country bank seldom sees their notes, except when some salesman for a big city bank comes along and offers a block of them at retail.

Suppose that the Steel Company wants $5,000,000 for thirty days, to pay for a big shipment of steel rails delivered to a Western railroad, and to be paid for in thirty days by the railroad. The National Bank of Commerce will take the company's note for thirty days and discount it at 5% or 6%, or even 7%. This is fine business, and the National Bank of Commerce is in line to get it, because the Morgan influence is behind it and is strong in the Steel Company also. Since 1904, however, the National City Bank has also had a sort of claim on it, because the Frick and Rockefeller interests are also powerful in the Steel Trust. In the case of Standard Oil or Amalgamated Copper or the Delaware, Lackawanna & Western Railroad, the National City Bank gets as much of the business as it cares to take. It is understood in Wall Street that it shares the business with the Hanover National Bank, but of course that is not the public's business.

Now, there is nothing speculative about this business. Provided that the collateral demanded for loans is good enough, and that the discounts for particular trusts are not too heavy, it is quite legitimate banking and does not transgress the letter of the law, no matter how foreign it may be to the spirit of the law. Of course, everybody in Wall Street knows that the National City Bank will loan on Rockefeller stocks perhaps more freely, particularly when the insiders are trying to boom these stocks, than on other stocks. Similarly, if a man wants to borrow money on Interborough Rapid Transit, or Metropolitan, or American Tobacco securities, or any other Ryan stocks or bonds, he goes first to the Bank of Commerce, or to the Morton Trust Company, because Mr. Ryan is powerful in these banks. There is discrimination by the banks.

I remember seeing a nice little boom in the Hill stocks nipped in the bud by a bank that does not love Mr. Hill. For two weeks, that bank loaned freely on Hill stocks, loaning $750 on stocks worth in the market $1,000. Finally, the loans got big enough to make the bank think that it might be able to produce some excitement by causing the borrowers a little trouble. So it called in its loans on Hill stocks and announced to the borrowers that hereafter it would loan only $500 on stocks worth $1,000. The little boom that was going on in the stocks came to an abrupt and untimely end. It would not be polite to try and guess how much money the president of that bank made when he covered his "shorts" in the Hill stocks.

Enough has been said, perhaps, to show that this item of "loans and discounts" represents practically the working capital of the trusts that do their banking with the Wall Street banks, and the money on which the brokerage business is carried on. All the national banks of New York City have about $700,000,000 or more of such "loans and discounts." At a time when the market is booming, the item of loans tends to expand rapidly. When a collapse hits the Street, the loans contract, sometimes by as much as $50,000,000 in one week. Those are the days when the ominous word "panic" is displayed in large red type on the front pages of the "yellow" newspapers. In nine cases out of ten, the alleged panic is nothing more nor less than a deliberate retrenchment made by the big banks, at the expense of the speculative public.

SMALL PANICS MADE TO ORDER

The bank and the stock flurry are so intimately related that it is as well briefly to indi-

cate the causes that may lead and have led to sudden retrenchment in loans by the banks, and thereby to little panics or flurries in the market. The San Francisco earthquake may be cited to illustrate one variety of these causes. It came when the banks were loaning very freely. It created a huge gap, and the banks knew that they would be called upon by the banks of the West to give up some of the money that these Western banks have on deposit with the Wall Street banks. It seems that the Wall Street banks did not want to disturb the market any more than they could help, so they called in their loans gently, slowly. In the two days that followed the disaster, all the clearing-house banks contracted their loans to the extent of about $23,500,000, which is quite an item but nothing marvelous. Of course, it was a very important factor in causing the market collapse, but the primary cause was merely human fright. On a smaller scale, the same phenomenon may be noted whenever a sudden failure of a stock-exchange house takes place, in the case of a great fire like that at Baltimore or at Rochester, or when any sudden catastrophe threatens a great loss of property or money.

A more frequent cause of contraction by the banks is the necessity of supplying big clients with money to pay their debts. For instance, suppose that the Steel Corporation has $10,000,000 of dividends to pay on November 5th. The dividends are paid by check — we shall say on the Bank of Commerce, and the Chase National. These banks get ready for that payment by calling in some loans. They have held the Steel Trust's money, and have loaned it freely through the summer and up to about October 1st. From that time, they do not loan so freely. If the loans do not contract of their own accord, the banks will begin to call them in toward the end of October. There may happen to be a slight, or even a serious, let-up in the stock market. If the loans are well distributed, such disturbances do not amount to much. If, on the other hand, there is some great pool which is running almost entirely on money borrowed from these banks, and all this money is called in, the pool either has to hurry about and borrow the money elsewhere, or let go its stocks. If the banks are not very friendly to the pool, something serious may happen to it.

This leads naturally to the cause that brings about most of the scattered but serious collapses in the market, using the word "collapse" to mean a sudden, abrupt, and dangerous drop of ten dollars or more a share in the principal stocks. In nine cases out of ten, such a collapse is due to the curbing of some great speculative move. Perhaps a group of financiers has been booming Union Pacific. It has been borrowing money in tens of millions. Suddenly, it can go no further. The public won't buy. The New York banks will not lend any more money. The insurance companies have been cut off by the new laws. The railroad treasuries, the express company banks, even the private funds of the financiers are taxed to their limit. A frantic effort is made to borrow money in England. That fails.

Then selling must begin. The pool manager gives orders to brokers on the Exchange to lighten the load. The prices of this stock collapse, slowly at first, then swiftly, as the news gets abroad. Rumors fly about the financial district as wasps on a hot summer day. This bank has called loans on the Union Pacific pool; that bank is deliberately crushing the pool; a group of Rock Island capitalists has started to unload a great block of stock picked up at low prices just for this purpose; Keene is fighting the market; Messrs. Frick and Harriman have fallen out, and the former is letting go; The City Bank has told the Harriman pool that it must lighten its burden.

The whole market drops. As the prices sag, a thousand loans on other stocks than Union Pacific must be protected. Perhaps the Hanover National has a loan of $100,000 to one man, secured on Great Northern stock worth, at the time the loan was made, $150,000. As this stock drops, the margin clerk reports that the margin of security is too slight. The man to whom the loan was made is asked to strengthen it, or pay off the loan. He may not be able to do either. Then he must sell his stock, or part of it. So the process goes, in every stock, in every bank. Next day, the newspapers are full of the "panic."

Now, that is not a panic. It is deliberate; a panic is not. That is logical; a panic is not. That can be stopped at any moment by the banks; a panic cannot. The difference between it and a panic is the difference between having a leg cut off by a skilful surgeon and by a railroad train. The leg is lost in each case, but the process is as different as can be.

Wall Street's surgical ward is well manned. Mr. Stillman and Mr. Morgan are its heads.

When Mr. Morgan is away, Mr. George W. Perkins takes his place, but the cable is kept busy. The group includes Messrs. Baker, of the First National, Hepburn of the Chase National, Valentine P. Snyder, of the Bank of Commerce, and, sometimes, Jacob H. Schiff, of Kuhn, Loeb & Co. In very acute cases, the Secretary of the Treasury, Mr. George B. Cortelyou, is on hand; but his real function is to apply the bandages, in the shape of a deposit of government money taken out of the Treasury and deposited in the banks. It is a useful function and one that should be encouraged, for bandages are useless until they are used.

THE ITEM OF STOCKS AND BONDS

Enough has been said to establish the intimate relationship that exists between these great Wall Street banks, the heads of the financial world, and the markets of Wall Street. The regular and legal and legitimate functions of the Wall Street bank in its relations to the trust and the trust securities have been outlined, at least. It remains to turn attention to the second column in the table on page 9530.

In a very small degree, these figures represent legitimate banking business. A national bank is supposed to buy some bonds, a very small amount, as a sort of "second line of reserve," so-called. The bonds should be safe, sound, and marketable. A national bank has no right at all to deal in real-estate, or in real-estate mortgages. In fact, nearly all its resources are supposed to be kept in forms that are "liquid," that is, that may be easily made into cash.

For the rest of this table, it represents, in large part, the speculative proclivities of the banks. The principal offender is the First National Bank. It will be noted that on August 22d it had 53 million dollars tied up in these stocks and bonds, and only 37 millions in discounts and loans, of which probably 30 millions consisted of loans in Wall Street on collateral, about $11,000,000 being loans "on call."

I am told, and I believe, that much of this $53,000,000 of stocks and bonds consisted of listed stocks, bought in the Wall Street market and held either for investment or for speculation, that is, to be sold again as soon as the market will take them.

This First National Bank is a peculiar institution. You may stand near the tomb of Alexander Hamilton, the father of our financial system, in Trinity Graveyard, and look into Wall Street. On the northeast corner of Broadway and Wall stands an old, stained building of red brick and brown stone. That is the First National Bank. It, like Mr. Stillman's bank, is very plain, outside and inside. When you go in, you will find the vice-presidents and most of the other officials sitting at roll-top desks, ready to talk about anything from the stock-market up, or down, according to the way you look at it. In the corner of the banking room is a door, leading into Mr. Baker's room.

If you happen to meet the president, you will find him charming. He inclines to the English type, restful and bland and soothing. He was born, they say, in Troy, N. Y., in 1840, but he carries his sixty-seven years very well indeed. He is not what one would call a rollicking soul, but he is far from being cold and distant, as his great rival, Mr. Stillman, is. He strikes one as being solid and true, and not at all as the president of the most speculative of our great banks.

But Mr. Baker got his training in a bad school, perhaps the very worst possible — in a private banking house addicted to high finance, risky underwriting, and bankruptcy. The house was Jay Cooke & Co., Philadelphia. If any man wants to study the training of Mr. Baker, let him read the history of the financing of the Civil War, the Northern Pacific financing, and the collapse of the House of Cooke. He will find it in all histories of Wall Street. When he has finished it, he will know part of the reason why the First National Bank has a weakness for stocks, and for high finance at large and plenteously.

When that firm failed, Messrs. Baker, H. C. Fahnestock, and James A. Garland, all prominently connected with Jay Cooke & Co., bought the First National and took over the "good-will" and much of the business of the fallen house. History says that they were backed in the venture by the money of a very wealthy woman. At any rate, that is the genesis, in the main, of the First National Bank of to-day. Later, Morgan interests came in, chiefly, it is said, on account of the common interest of the two in the Northern Pacific. This also brought Mr. J. J. Hill into more or less close relationship with the First National.

Finally, the Moore brothers came to New York from Chicago and started on a terrific career of what looked to Wall Street like the wildest finance in history. They needed a

bank or two, of course. Any one who reads this article will see that people who proposed to do what the Moores proposed to do will need a bank, or two. They wisely picked out the First National as fitted, by precedent and ethics, for their purposes. They bought huge blocks of its stock and finally took their places on the board of directors. They have been good customers, and have behaved like gentlemen — so says the bank itself. I was once informed, as though it were a latter-day marvel, that not once has any member of the Moore clique ever asked the First National Bank to over-certify a check, loan beyond the legal limit, or in any other way extend such "accommodation" as, in the old days, was considered a legitimate perquisite of the large bank stockholder.

[*In the third article of this series, the career of the First National Bank of New York City will be continued; and the burning question of "reserves," and the relation between the United States Government and the Wall Street banks will be taken up in some detail.*]

A CITY WITHOUT STRIKES

MANCHESTER, N. H., WHERE LABOR IS ORGANIZED, BUT WHERE THE LOWEST WAGE IS KEPT ABOVE THE COST OF COMFORTABLE LIVING

BY

FRENCH STROTHER

ARE you *on* the corporation, or *off* the corporation?" That is the great question in Manchester, N. H. To be *on* the corporation means that you work for the Amoskeag Manufacturing Company, somewhere in the double row of cotton mills that line both sides of the Merrimac River in a solid mass of bright-red brick nearly a mile and a third long. If you are *off* the corporation, you do not work for the Company, and you are probably either a shoe-worker in one of the several shoe factories, or you are in business "on the Street"—if you are *on* the corporation your geographical location is defined as "on the Canal"—or you are a stranger.

But, even if you are off the Corporation and anything else than a shoe-worker, the chances are nine to one that you make your living out of the people who make their living on the Corporation. If you are a merchant, the operatives are your customers; if you are a politician, they elect you or defeat you; if you are a Catholic priest, they are your parishioners. The Corporation is older than the city; it once owned most of the land upon which the city is built, and still owns much of it; it provides work and pay for most of the 70,000 people who live in Manchester; politics are what the Corporation wants them to be, in the long run; the hours of the schools are adjusted to suit the convenience of the mill operatives; and even religion is its friend and bulwark.

THREE STRIKES IN FIFTY-FIVE YEARS

And in fifty-five years, there have been only two general strikes in Manchester, and one other serious strike. In 1856 the cotton mills were closed down by a strike so violent that the riot act was read in public on the streets. In 1886, the operatives struck again, and lost. Four or five years ago the shoe-workers went out for a couple of weeks, lost, and went back to work. To-day everything is quiet. Everybody has a job, and the "loafer" on the streets is warned to get one or to "get out," as there is plenty to do.

I went to Manchester to learn why the city had no strikes. I talked to labor leaders, mill superintendents, newspaper men, city officials, schoolboys, mill operatives, and physicians. I asked them all why there were not more strikes. Every one of them had some fault to find with the mills or the factories, but no two pointed out the same fault; the flaws each one found depended on his own relations with them and on his own point of view. But all, labor leaders included, said that there were no strikes because there was "nothing much to kick about." In other words, there were plenty of personal grievances, and no doubt

many of them were just; but, generally speaking, capital and labor get along there because they deal fairly with each other.

LABOR UNIONS NOT ARROGANT

Union labor outside the cotton mills is strongly organized in Manchester. Twenty-six unions are enrolled with the Central Union. A labor leader checked them off for me, with comments on their condition. In nearly every instance, the union controls labor conditions in its trade. Most of the trades have the eight-hour day. Nearly all have received increases of wages, so that they are on a fair footing with the best in New England. In nearly every case, these advantages were got without much trouble, usually without a strike, often simply by asking for them. Where strikes have been called (except in the shoe strike a few years ago), the walkout affected only one shop or one department, and lasted only a few hours or a day or two. Requests for improved conditions have usually been made through a committee of the union, dealing directly with the responsible managers of the business, and it seems to have been tacitly accepted by all that these committees had the confidence of their fellow-workers and had the right to present grievances and to have them discussed fairly and in an amicable spirit.

DIPLOMACY BETWEEN CAPITAL AND LABOR

The unions are strong, and the managers know it: the managers have the power of capital behind them, and the unions know it; but both sides have wisely refrained from talking about their strength and from using threats or bluster. The method has been rather that of the diplomats of the great Powers who discuss their differences in seeming oblivion of the force that really determines results. Each side steadily pursues its own advantage—the managers, the maintenance of a low cost of production; the operatives, better hours and more pay—and the result of this pursuit by these methods and in this spirit is the nearest approach to ideal peace that civilized people have attained anywhere—peace that is maintained by preparedness for war while using every device to avert conflict.

Neither capital nor labor in Manchester wants trouble. The mills are prosperous, help is barely sufficient to the needs of production, and a strike would be a costly interruption of a business involving many millions of capital. The laborers in the mills are not so well paid as they would like to be, but they make enough to live on and to spare under the present scale; and they prefer to accept the steady income they have rather than to fight for the best possible income with the chance that the fight would probably cost more than the difference in pay.

There are many other reasons why the mill operatives are content. The mills are a very old institution. They are by far the chief institution of the city. As a result, all the conditions of life in the city have long since been bent to suit the convenience and comfort and well-being of the operatives. The mills and their people have become accustomed to each other's habits through long years of adjustment and the growth of custom. There has grown up a tradition of treatment that they may expect from one another. The old hands are used to this relation, and new hands soon absorb the tradition. Thus, to work in the mills is the normal thing to do; it is as natural a relation to life in Manchester as it is for an Indian to belong to his tribe.

"NOTHING TO KICK ABOUT"

The Corporation keeps the cost of board and lodging down to a fair level throughout Manchester by going into the business of landlord itself. It owns attractive brick houses, set in a beautiful park-like reservation with lawns and flowers and magnificent shade trees; and it lets these tenements (which do not correspond at all to the barren and ugly city tenements) to old, trusted employees, who sublet rooms and provide board. The Corporation keeps the houses in repair, pays the taxes, and sees that they are properly heated and kept in sanitary condition. The Corporation charges a very low rental, and compels the sub-letting tenant to charge a very low rental and a very low rate for board to the operatives. Girls who make an average weekly wage of $11 can thus get excellent board and good lodgings for $3.50 a week; and with other operatives the proportion of expense is about the same. In spite of the small income, the tenants succeed in making a profit, and many of the prosperous businesses in town were founded on the earnings made as Corporation boarding-housekeepers. Only a tenth of the operatives live and eat in these tenements, but the competition they exert keeps down the cost of living everywhere in town.

Many curious local customs have grown up to defend and make easy the local peculiarity of relationship with the mills. The operatives work long hours five days in the week, partly by choice, so that, under the fifty-eight-hour law of New Hampshire, they may have Saturday afternoon as a holiday. These hours are from half-past six in the morning till twelve, and from one till six in the afternoon. Hence, the public schools are dismissed from half-past eleven till two o'clock, so that the children may have time to take lunches to members of their families who work in the mills, and then to get their own.

MANCHESTER AFTER WORKING HOURS

With such long hours, there is little time for marketing or shopping or recreation during the day. Hence, every Thursday night and every Saturday night, Elm Street ("the Street" is its only name in common conversation), which is the shopping centre, is brilliantly lighted, with every store and shop and bar and bank and pleasure resort open until ten or eleven o'clock. On these nights the street is thronged with townspeople of all ages and conditions, shopping, marketing, going to the theatres, flirting, or simply parading in their best clothes—good clothes they are, too—for the pleasure of seeing and being seen in a crowd. The banks receive deposits on these nights, and the savings banks say they have so much cash from the operatives that they discourage large deposits. Even the tax collector's office is open, and a long line of men and women, plainly operatives, reaches out into the street and for some distance along the sidewalk, waiting their turn to pay taxes on real estate bought with their savings.

These tax payers are quiet, serious-looking folk. Indeed, there is very little of the boisterous spirits and laughter, even among the young people, such as would be seen, for instance, on the streets of a Western town on Saturday night. But there is plenty of good humor and quiet joking, though on the whole there is an impression that these people take life pretty seriously. Many of them have had to face its responsibilities rather young; part of the impression may be due to the native reserve of the people, and part to the racial prejudices that run strong between the different nationalities that populate the city.

There are distinct racial groups in Manchester. The large department stores are owned by "the Yankees," as they call themselves. The dry-goods stores, confectionery shops, notion shops, and many other of the best retail businesses in the city are owned by French Canadians. The little newsboy who dogged my footsteps down the street was crying "Ah-me-reé-can papers" with a broad accent. French, Polish, Italian, and Greek, are heard everywhere. There are many Irish in the city.

These people live in fairly distinct districts with members of their own race. They divide also into parishes. The Poles have their own churches and schools. The French have theirs, and their own labor unions. But a very large majority of them are Catholics, however they may nationalize their religion. Nearly every Catholic child attends a parochial school, and all the Catholics look with reverence at the big brick house of the Bishop that adjoins the Cathedral. Catholic church spires, Catholic schools, Catholic hospitals, Brothers' houses, and convents are all only symbols of the central authority that resides there and that exercises great power. And this power has been for industrial peace. It is credited in Manchester with having often been the intermediary between the operatives and the mills, and with having prevented many strikes.

SOCIAL LINES NOT SHARPLY DRAWN

The residence districts of town are divided also upon the basis of wealth. The richest people flock together in the North End, the poorest in the South End, and the everyday man who owns his home lives between the two. The houses of the rich make their little pretensions to superiority—in size, in the weird architecture that is so strangely pleasing to Americans with money and uncultivated taste, and in the greater sweep of surrounding lawns. The "middle-class" houses are built for comfort with economy. The poor live in tenements, according to their means and choice—the Poles and Irish in pretty good, clean houses, the Greeks in seeming pleasure at the presence of dirt.

But, though this division by economic station is an accepted fact, and though in general the social groups are necessarily determined largely by a man's ability to entertain as well as his friends, there is little attempt to be aristocratic or socially exclusive, because it often happens that the wife of a steam engineer in one of the mills has a clear title to membership in every patriotic and historical society, from the

Colonial Dames down—and the rich man's wife who lives out near Stark Park has not. When the rich people want to be "society" people, they go to York, Me., where there is a rich and socially exclusive summer colony that understands such social ambitions and where their social pretensions do not anger the operatives.

Such social lines are not drawn, too, because there is a good deal of New England contempt for that sort of thing, and some New England sense of a duty to be democratic. Furthermore, Manchester is a working town. The rich people have their work to do as well as the poor, serious work that involves the responsibility for large investments of capital, and they have to take their work seriously enough to go at it pretty much in their shirt-sleeves. Even the exalted and lonely agent of the mills—the direct and locally omnipotent representative of inscrutable and omnipresently omnipotent "Boston capital"—is a plain, blunt man, whose father before him was agent, and whose son after him will be agent. He is too busy to waste on frivolity the energies that make him an efficient workman at a big job.

MERCHANTS WHO ROSE FROM THE RANKS

The everyday people—merchants and the like—cannot afford to offend their customers by ostentation, and their customers are the mill people, many of whom remember when the merchant was a bobbin-boy or a mule-spinner. For there are many operatives who have been in the mills thirty, forty, even forty-five years. They have saved money and bought homes; their children and their children's children have followed them into the mills and built homes alongside the old folks. Some of them left the mills and rented Corporation tenements, and made money enough by boarding and lodging other operatives to get into businesses of their own or into more skilled trades at better pay. Most of "the Yankees," who were the bulk of the operatives forty years ago, have done this. Many of the Irish, who succeeded them, have done it. Many of the French Canadians, who succeeded the Irish and now form the chief labor supply, have done it. Gradually they are being succeeded by Poles and Greeks and Italians. In other words, the conditions of life in Manchester have been so regulated that it has been possible for the operatives to lift themselves in the economic scale so generally that the upward movement can be traced in bulk by nationalities and by short terms of years.

INDUSTRIAL RELATIONS RIGHTLY ADJUSTED

These people might easily have gone to other towns if Manchester did not satisfy them. There are dozens of mill and factory towns nearby, where they would be welcome. But most of them have preferred to stay. All the conditions of their life tend toward peace: the adjustment of everything to their convenience; the influence of the Corporation in keeping down the cost of living; the influence of the Catholic Church; the sane temper of employers toward employees with grievances; the lack of ostentatious social exclusiveness; the force of tradition in a city of home-owning laborers long used to dealing with their employers; and opportunity to advance in the economic scale.

The case of Manchester has a large bearing on the broad subject of industrial peace in general. I have tried to show how it has been possible there for a large body of workers to have amicable relations with employers for so long a time. Of the reasons given above, I think the strongest is perhaps this: the employers have been far-sighted enough to see that the success of their business would not best be furthered by a narrow and ugly struggle for every little advantage, even over their own men, that they could get. They have been businesslike enough — or sordid enough, if you please — to be very eager to succeed. But that ambition has not blinded their eyes to the fact that their employees have a stake in Manchester as well as they, and that, by judicious interference in and direction of local economic forces, they could make living conditions such that the cost of living should always be less than the least wage paid, and thus eliminate the first great causes of discontent — poverty and lack of opportunity. And by this method they have encouraged the growth of local attachments that have gradually welded the population into a permanent community in which the people have so much at stake that they are slow to risk what they have at stake in the uncertainties of strikes. The people are thus too stable to be friendly to merely irresponsible agitators, while, as a mass, they have the weapon of the momentum of that mass whenever its public sentiment has been crystallized. This crystallization is slow enough to make its judgment sound.

A DESERT CITY'S FAR REACH FOR WATER

A $23,000,000 AQUEDUCT FOR LOS ANGELES TO BRING WATER 240 MILES FROM MOUNTAIN PEAKS TO THE SEA-SHORE, FOR CITY USE AND FOR IRRIGATION

BY

WILLIAM R. STEWART

IN 1904 Los Angeles, growing at a rate of about 50,000 inhabitants a year and with a surrounding country demanding more water for domestic and agricultural needs, began seriously to look about for a source of increased supply. The Los Angeles River was becoming inadequate, for the level of the underground streams was being alarmingly reduced by the extension of the irrigated areas of the San Fernando Valley. The situation became so strained that legal wars between country and city over water-rights waged hotly from the local courts to the Supreme Court of the United States.

An investigation of the streams of the coastal range proved that while there were a number of sources of water supply, every drop of it had long before been preëmpted by ranchers for irrigation, or by other towns. The United States Government also investigated the water resources of the vicinity, but only confirmed this report.

The San Fernando Valley is a sort of pocket that has been gradually filled by detritus from the mountains of the coast ranges, and its deep gravel beds greedily absorb the flood waters from the mountain streams and maintain a great body of underground water. This body was becoming exhausted.

About this time the problem was partially solved by a former city engineer and ex-mayor of Los Angeles, Mr. Fred Eaton. As a ranchman and prospector, he had explored the cañons and the valleys of the high Sierras, and he turned his attention again to the Owens River, cradled in mountain snows, pouring through lost valleys, and issuing forth into the Owens Lake, a great salt sink with no outlet. The area of the Owens watershed is about 2,800 square miles of sparsely settled country. Crowning the snow-clad peaks of the range is Mount Whitney, 15,000 feet above the sea. The eastern walls of these mountains are steep and broken by deep ravines and cañons, among which are many diminutive valleys where the waters gather in natural reservoirs. Out of the latter the mountain streams drop into the Owens River Valley and flow southeastward toward the desert. The valley is about a hundred miles long and ten miles wide.

In 1905 Mr. Eaton, who had obtained options on water-rights land along the Owens River, suggested this plan to the water board: Let the city build an aqueduct with a capacity of 20,000 miners' inches (about 10 million cubic feet) and he would give the city perpetual rights to 10,000 miners' inches of water. The city in return should give to Mr. Eaton and his associates all the water above 10,000 inches for irrigation purposes, electrical power development, and other commercial uses—they to pay the city for carrying the water in the aqueduct. The water board considered the offer, and then consulted the United States Government. The Government officials advised that the proposal be rejected, and promised sympathetic assistance to the city in carrying out the project independently.

Mr. William Mulholland, superintendent of the water department, on whose recommendation the city had three years before brought out the Los Angeles Water Company, placing the water supply directly under municipal operation, made an extensive investigation of the Owens River country and reported that it was feasible to bring the water thence to the city. Mr. Eaton was easily induced to part with what holdings he had, at a reasonable figure, and the department began at once to acquire options on other land which was needed. All this was done with the greatest secrecy, only the important civic organizations knowing what was in progress and even the members of the city council being kept in

ignorance. No field was to be left open for private speculation. So quietly was it all done that when officials of the United States Reclamation Service, who had begun to formulate a plan for the irrigation of parts of the Mojave Desert, sought to acquire rights along this stream, they found that the people of Los Angeles had anticipated them.

In July, 1905, when the newspapers first told the citizens of Los Angeles of the Owens River project, the city had already made its purchases. The water department had paid for them out of its ordinary appropriations. In September the people, by a vote of about 14 to 1, approved a bond issue of $1,500,000 with which to buy the land and pay for the preliminary work of surveying, etc. This work was begun at once. A board of engineers spent a month in the Owens River country, and their report sustained in every way the findings of Superintendent Mulholland and his assistant, Mr. J. B. Lippincott. In June, 1907, the people, by a vote of about 10 to 1, authorized the issue of $23,000,000 in bonds to build the aqueduct.

Construction work on the aqueduct is now under way and will be completed in about five years. The aqueduct will be by far the longest of any city-owned water course in the world. In Australia the city of Coolgardie is supplied by a pipe line, privately owned, 317 miles long, but it has three pumping relays and carries only 750 miners' inches of water. When Los Angeles' system of reservoirs is complete, the permanent supply from Owens River will be sufficient for a city of 2,000,000 population.

Los Angeles will itself build this great aqueduct. At Tehatachepee it is now erecting a cement plant, at a cost of $350,000, where it will make its own cement. Apart from the cost of the steel piping, all the money spent for materials will go to southern California's factories. That means that about 90 per cent. of the entire $23,000,000 will find its way back to Los Angeles mills and men.

The aqueduct will be constructed of concrete and steel, will be approximately ten feet in height by fourteen in width, and will pass across deserts, over cañons and through mountains, to deliver its supply in a great reservoir near the city limits. There will be twenty-nine miles of tunnels through granite ranges, nine miles of steel pipe nine feet in diameter, and 186 miles of conduits. There will be few engineering difficulties to overcome, but so much of the work will be in the Mojave Desert, where food and fuel supplies for the workmen are lacking, that it will present a commissariat problem not frequently encountered. For a time the automobile, the successor to the burro as a means of desert transportation, will be relied on, but ultimately a railroad line will be constructed. The work will be done entirely by American citizens, a law of the state forbidding the employment of Chinese, Japanese, or Mexican labor.

The diversion of the water of the Owens River to the aqueduct will be made about forty miles above Owens Lake, at an elevation of 3,800 feet. Thence the water will be conducted in a canal higher than the natural grade of the river to a reservoir about 200 feet higher than the lake, and of a capacity of 21,000,000,000 gallons. This reservoir will be the largest of the system and will store the flood waters of the region and act as a settling basin. Four other smaller reservoirs at different points along the aqueduct will be used for storage and regulation, and will also ensure the city against water famine in the case of a temporary accident to the main reservoir above.

To provide power for boring the twenty-nine miles of tunnels, a $250,000 plant is being erected on Cottonwood Creek, a precipitous stream flowing into Owens Lake. The two principal tunnels will be, respectively, nine miles and five miles in length. About 5,000 men will be employed as soon as the operations are fully under way.

One half of the water brought from the Owens Valley will suffice for a population of a million (Los Angeles' present population is a little less than 300,000), leaving the other half available for irrigation. The greatest discharge of the Owens River is during the summer, when water is the most needed, and the regulating reservoirs will be so arranged that about 15,000 miners' inches can be supplied to irrigators during the rainless season. This quantity will be sufficient to irrigate nearly 100,000 acres of land, providing a direct revenue to the city from the sale of water of more than $1,000,000 and adding probably $50,000,000 to land values. During the past few years about 70,000 acres of nearby land have advanced in value by irrigation from practically nothing to about $1,000 an acre. These 70,000 acres now produce crops worth $24,000,000, support 40,000 persons, and pay in taxes about $400,000 annually. Owens

River water will double the productiveness of southern California and increase the suburban and rural population of Los Angeles County by 60,000 or 70,000 persons.

At a point about thirty-five miles from the city, there will be a drop of 1,500 feet. Experts have calculated that it will be possible to develop at least 75,000 horse-power here, which at only one-tenth of the present rate of power in Los Angeles will bring to the city annually a net revenue of $1,406,000. This revenue is computed after all expenses of maintenance and operation and the interest on bonds and sinking fund have been deducted. The building of this power plant and the installation of transmission lines and substations will cost between $4,500,000 and $5,000,000, which is not included in the $23,000,000 for the aqueduct itself.

The confidence which Los Angeles feels in its great undertaking is largely its confidence in one man, Mr. William Mulholland, who will be at the head of the operations. Mr. Mulholland is Scotch-Irish-American. "Can you do the work?" ("wurruk" it sounds from him) is the question he asks when a man seeks employment. If the man does the "wurruk," he stays; if he doesn't, he goes.

In 1902 Los Angeles bought out the property of the Los Angeles Water Company and began to run the plant as a municipal enterprise. Since then the system has been practically rebuilt and many extensions made to keep pace with the marvelous growth of the city. Yet the price of water to the people has been reduced 25 per cent., and each year the department has shown a large surplus.

Among the men who can "do the work" with Mr. Mulholland is Mr. J. B. Lippincott, who will be his chief assistant in building the Owens River aqueduct. Mr. Lippincott came to the water department in 1906, being at that time supervising engineer for the Pacific Coast district of the United States Reclamation Service and hydrographer of the United States Geological Survey for California. He had previously been head engineer of the two principal reclamation projects on the Pacific—the Klamath and Yuma River systems.

THE STRAIGHT WAY OF LIFE

METCHNIKOFF'S PHILOSOPHY OF THE PROLONGATION OF LIFE AND VIGOR, WITH AN EASY DESCENT TO DEATH

BY

P. CHALMERS MITCHELL

FORMERLY EXAMINER IN BIOLOGY TO THE ROYAL COLLEGE OF PHYSICIANS; AUTHOR OF "OUTLINES IN BIOLOGY," ETC.

THE title of this article is a rough translation of the word "Orthobiosis," invented by Professor Elie Metchnikoff to denote what is at once a new standard of morality, a scientific guide to life, and a new hope for humanity against the greatest evils that encompass us. Every one knows that Metchnikoff is now chief of those who carry on the high traditions of Pasteur.

Metchnikoff is a Russian of the professional classes. (His older brother was the provincial functionary whose death, in the maturity of life, was described in Tolstoi's "The Death of Ivan Ilyitch.") He became Professor of Zoölogy at Kazan and made a great reputation among zoölogists by his detailed studies of the structure and life histories of some of the lower invertebrate animals. Owing to political trouble, he left Russia and joined the Pasteur Institute in Paris. His researches on certain water-fleas had led him to pay special attention to the behavior of the wandering cells that occur in all except the simplest animals, and that appear in a familiar form as the white corpuscles of human blood. He found that these cells restlessly pervade the tissues, living a semi-independent, almost parasitic life. They are extremely mobile and sensitive to stimulations of different kinds, being attracted by some substances and repelled by others. When there are disturbances in the body due to morbid processes, or to the presence of foreign intruders, such as microbes that have invaded the tissues, these wandering cells crowd around the affected spots, ingesting and destroying the intruders, removing the diseased tissue, and generally aiding in the healing process.

These investigations are the foundation of

the modern views of inflammation, and gained for Metchnikoff a reputation as a pathologist at least as great, and naturally much more widespread, than his fame as a zoölogist.

The special quality of the wandering cells, of which white blood-corpuscles are the examples most easy to observe, is their power of destroying other living cells, engulfing them bodily where that is possible; or, in the case of larger victims, pressing against them and sucking out their contents. Metchnikoff has called them "eating cells" or "phagocytes," and the process is "phagocytosis." In the main, phagocytosis is beneficial to the body, and phagocytes are guardians of its welfare. But the action is mechanical, in the widest sense of the term, an affair of action and reaction, of appetite and resistance, and not of orderly benevolence.

HOW MEN GROW "OLD"

When the cells of any tissue—muscle or kidney, brain or bone—are in active health, either they do not attract the phagocytes or are able to repel their embarrassing attentions. The maintenance of the integrity of the tissues demands a delicate balance of power between the higher, specific cells and the omnipresent phagocytes. The latter are as ready to devour the tissues themselves as foreign intruders, and if they are unduly stimulated or the tissues unduly weakened, the baleful process of tissue destruction begins; muscle tissue, brain tissue, kidney tissue or what not, is replaced by the phagocytes, and the corresponding functions degenerate. The action is naturally progressive, and sooner or later leads to a condition incompatible with life.

According to Metchnikoff, this is the essential nature of the changes which take place in old age. The activity of the phagocytes overpowers the activity of the normal cells, with the result that senile debility is produced. According to Metchnikoff, in the vast majority of cases, senile debility comes too early, being due to causes which may be prevented—if not by our own generation, at least in the future.

This early senility is only one instance of what Metchnikoff calls the disharmonies due to our inherited constitution. In a volume, the English translation of which was published in 1903, under the title, "The Nature of Man," and in a second volume, "The Prolongation of Life," which is announced for this autumn, he has explained in detail the nature of his general views. In many ways, man is out of gear with his environment on account of the fact that many of his qualities—physical, mental, and emotional—which have come to him as a legacy from his remote ancestors and which at one time were probably useful adaptations, are now positively harmful. Such disharmonies are the real source of the pessimism which has tinged so deeply the philosophy and literature, the religion and the folk-lore of ancient and modern times, and for which, as yet, no complete anodyne or remedy has been found.

Metchnikoff, however, is a convinced optimist, and thinks that as horticulturists use their knowledge of the constitution and qualities of plants to modify these in definite directions, so also it is within the power of science to modify human nature. The method of operation must be different, partly because the relatively short life and rapid rate of reproduction of most plants indicate selective breeding as the most effective means of producing modification; in the case of man, obvious considerations, if only those of time, rule out selective breeding, and the long life affords the opportunity of direct modification of each individual. Advances in knowledge and scientific method are to be employed to rectify human life, and to remove from it all acquired or inherited disharmonies, until there be attained the condition which he calls "orthobiosis"—a cycle from birth to death from which extraneous accidents have been removed, and in which each successive phase comes in its due course.

We are already advancing rapidly along the first stage of the process. Year by year, as the study of diseases advances, we are getting nearer the time when mankind will be free from their burden, a burden measured not only by the deaths due directly to them but by the loss of health and shortening of life caused to those who may appear to have recovered. The normal duration of life is extending in all civilized countries, and this is the result of improvements in cleanliness, general hygiene, and greater simplicity of life. Already, if scientific knowledge were applied to its fullest extent, the race would make an enormous stride towards "orthobiosis," and it is a definite part of the new morality that the parliaments and executive officers who have charge of

human affairs should be experts in the new scientific knowledge.

THE CAUSE OE EARLY SENILITY

The most striking part of Metchnikoff's doctrine, however, is an affair of the individual rather than of the state. One of the legacies that men have inherited from their animal progenitors is the possession of a very capacious large intestine, in which the *débris* of the food remains for a considerable period. All the conditions in this organ are normally favorable to the existence and multiplication of a varied flora of microbes, among which the most abundant and pernicious are those which set up putrefaction of the contents.

By a series of most ingenious investigations, Metchnikoff has shown that there is a direct relation between the presence of such a possibility of intestinal putrefaction and a relative shortness of life amongst vertebrate animals generally. The depression, headaches, and even serious illnesses caused by prolonged retention of the contents of the lower bowel are familiar to us all, and are the result of the microbial poisons being absorbed into the blood and thereby affecting the tissues generally. These poisons not only cause immediate troubles, but are chief agents in the production of early senility. They depress the resistance of the higher cells and stimulate the activity of the phagocytes, so that their presence encourages the eating away of the specific elements of the tissues and their replacement by useless, degenerative material. Whatever may have been the original use of this great reservoir of waste material, it is now positively harmful.

Although the resources of modern surgery have made it possible to "short-circuit" the large intestine, shutting off the capacious lower bowel, and although this radical interference has been most successful, Metchnikoff does not suggest the universal adoption of so extreme a measure. His method is to attack the flora of microbes, and prevent or reduce the intestinal putrefaction they set up. A vast number of experiments have been made, the object of which was to render the contents of the large intestine aseptic by treatment with disinfecting agencies. Microbes and their spores, however, are possessed of walls highly resistant to the action of chemical agencies, and it is impossible to introduce substances in sufficient bulk and power to kill the microbes without doing serious harm to the living cells that form the lining of the intestine. It happens that the bacilli which cause lactic fermentation, those which sour milk by transforming some of its sugar into lactic acid, are able to become acclimatized in the intestine, and that their presence under favorable conditions arrests the activity of the microbes which cause putrefaction.

CURDS TO CHECK ADVANCING AGE

After exhaustive investigation of the bacilli employed for souring milk in various parts of the world, Metchnikoff has found a strain of which pure bacilli "cultures" can be made. These can be introduced into the body in various forms. Soured curds, prepared from boiled milk by the addition, at the proper temperature, of a leaven containing the pure "cultures," can be eaten in quantities of a little more than a tea-cup full once or twice a day. Taken with sugar, the curds are quite pleasant. Tabloids containing the pure cultures in a dry condition may be taken along with a milk diet. It is necessary, however, that the general diet should be as simple as possible. Alcohol in any form, and even in small quantities, is injurious; it aids the process of putrefaction and interferes with the action of the lactic bacilli. Metchnikoff himself limits his own food practically to milk, chocolate, and bread; but if the diet be plain, there seems to be no reason why it should be limited to milk and vegetables. Uncooked fruits and salads are specially to be avoided, as they are always contaminated in a high degree with the spores of moulds and of various harmful bacilli, while those which have been grown in market gardens are often charged with the bacteria of specific diseases. The soured milk treatment has been tried experimentally in a large number of cases, and its general effect on the health has been carefully investigated. There appears to be no doubt as to its efficiency in reducing or almost completely preventing intestinal putrefaction.

It is possible, then, for science to intervene in favor of the higher cells of the body in their warfare with the phagocytes, by the conquest of disease, and by the arrest of the processes of putrefaction, the absorbed poisons from which are a constant menace to the body. There are other methods which are now being worked out, but which already approach accomplishment. It is possible to prepare serums that have a definite effect in stimulating the different elements of the body, and although there are

great practical difficulties in the way of making and experimenting with these, it seems probable that science will be able to come to the aid of any tissue that seems to be weakening before its due time.

THE INSTINCT OF LIFE

The attainment of "orthobiosis" would enormously increase the happiness of human life. Human beings would remain active and vigorous, bodily and mentally, long after the period at which most people are now a burden to themselves and others. The duration of the working period of each individual life would be enormously increased. But the psychological effect would be even greater. Metchnikoff has shown, by a most interesting series of studies, that in a normal human life there is a gradual succession of instincts. One of the most important of these is what may be called the instinct of life, the sense of the value of life. This is almost absent in the young, and grows slowly as maturity is reached. Persons who die, or who become aged in early middle life may never acquire it. Pessimism, the expression of the absence of the sense of life, is a phase of youth. Many of the best known pessimists, such as Schopenhauer, have lived to survive their pessimism; and perhaps a majority of great men—Goethe for instance—pass through pessimism to a convinced optimism. In Metchnikoff's opinion, it is of the utmost importance that this truth should be realized, and that those who are in the phase of pessimism should understand its temporary nature.

THE INSTINCT OF DEATH

Still more interesting is the relation of "orthobiosis" to death. At the present time, death comes in the vast majoity of cases by some accident of disease or degeneration, and cannot be regarded as in any way natural. We have as yet almost no information as to what would be the natural limit of human life, but it may be set down as, at the least, considerably more than a century. As it nearly always comes too soon, and as the result of morbid processes, we are ignorant as to what natural death would be.

Metchnikoff has collected information from a few rare cases which leads him to suppose that if it came in its proper season, death would be as welcome as any other normal phase of the cycle of life. In a harmoniously developed life, the sexual instinct would appear at sexual maturity, and not before that time. As life went on, the sense of life, or instinct of life, would grow stronger and stronger, but in the end would be replaced by what Metchnikoff calls the instinct of death. This would come not as the wish to be free from pain, but as a gentle acquiescence of the mind and the emotions in the natural processes of the body.

It is doubtful if truly natural death ever does occur among human beings, and there is no direct evidence as to its cause. It is practically certain that it is not the result, as has been supposed, of a failure in the power of the constituent cells of the body to grow and reproduce. The most probable theory is that it is the result of a gradual accumulation within the body of narcotic by-products of cell-activity, and that it is directly comparable with sleep, and that the last sleep would be received as gratefully by the permanently tired body as temporary sleep is received by the temporarily tired body. For such a condition to be attained it is necessary that life should be stretched out to its due limit, and not shortened by "accidents" of disease or habit.

The reproach has been brought against the philosophy of Metchnikoff that it is purely selfish, considering the individual rather than the race. It seems obvious, however, that the race, apart from the individuals of which it is composed, is a mere abstraction, and that that race is most likely to survive and develop further which contains the largest number of vigorous, happy, and active individuals. Moreover, Metchnikoff shows that as the scale of animal life is considered in ascending series, the importance of the individual increases. Among single-celled animals, when a colony is formed, the components are absolutely merged in the whole. In various kinds of polyp colonies, the constituent individuals become specialized organs of the whole, losing their own integrity. Among colonial insects, although no physical link binds the units into the whole, the different individuals are incomplete; some, like the drones and queen bees, are useless except for reproduction; others like worker bees, being sterile. Among vertebrates, no such loss of individual integrity occurs. Each unit, however it be bound up in the welfare of the community, retains its complete set of functions. Metchnikoff points out, however, that in a state of "orthobiosis," specialization

would occur, but that it would affect the different periods of each individual life. There is no reason, for instance, why there should be sterile working women and women given up to the privileges and duties of sex. After the period of early youth would come the efflorescence of sex, and after that, in the natural order of events, a period when woman might devote herself, undisturbed by sex, to specialized functions in the community.

In more general affairs, the rule of the young would cease. The experience and ripened faculties of the old would no longer be destroyed by bodily and mental weakness, and the affairs of mankind would be guided by men who had passed beyond the period of pessimism, who had acquired the sense of life, and who combined the experience and wisdom and calm judgment of age with the energy of an enduring youth.

THE DAY'S WORK OF A VOLCANOLOGIST

PERSONAL EXPERIENCES DURING RECENT ERUPTIONS OF THE VOLCANOES OF VESUVIUS AND STROMBOLI

BY

FRANK A. PERRET

FORMER HONORARY ASSISTANT OF THE ROYAL VESUVIAN OBSERVATORY

With Photographs mainly by the Author

ON ONE of the swift little ferry-boats which now connect the railroads of Sicily with the main lines of Italy—a fresh north wind lifting the sunlit waters in crested waves of blue—the strait of Messina became for me "the Valley of Decision." In the hazy distance to the northward stood a pearly pillar of cloud which marked the place where Stromboli, with unwonted fury, was putting forth its powers; and here, among the blue Sicilian mountains, arose the sloping cone of mighty Ætna, resplendent in its glistening winter robes, the "Pillar of Heaven," the "Nourisher of the Snows"—and this, too, crowned with curling wreaths of vapor, sure signals of a new activity. I must choose which of these fascinating volcanoes I should visit first. I chose Stromboli, in the Eolian Isles, and went thither at once by boat.

The Greek name for Stromboli, "Strongyle" ("circular"), is well given. A distant first impression shows in a perfect isolation the round volcanic cone which seems to fall by a steep incline on every side down to the water's edge, like an Egyptian pyramid afloat upon the sea—the volcano is the island and the island the volcano. As we approached, however, a small plateau came into view upon the western side, with the hamlet La Ginostra nestling there; after rounding all the southern flank, a second much larger plain appeared with the chief town San Vincenzo and a suburb—in all a population of about 4,000 souls.

From these inhabited plateaux the crater is not seen. Hidden behind the summit of the mountain, which towers a full two hundred yards above the active vent, the volcano may show a fair activity without disturbing those who live so near. The crater lies upon the northern flank and from its lower rampart slopes of sand and ash and scoriæ descend into the sea, on which the red-hot rocks of each explosion depict at night a bright cascade of fire.

The bi-weekly coming of the steamer—at all times an event for the little sea-bound colony—was doubly so when peril was menacing their homes. They crowded all along the beach to see who came at such a time; the boats were pulled up on the sand, and the volcanologist and his baggage were soon ashore.

A VISIT TO STROMBOLI

Although this small volcano is active all the time, its normal state is quite another thing from the occasional out-pourings of its fury, such as that of the present year. To live upon Stromboli during an eruption is a wonderful experience, with a little spice of danger. The tiny steamer sailed away and left me there on

the top of a submarine mountain which has been raised by volcanic forces from the bottom of the sea. Far above, the great smoke pillar rose from the hidden vent; from time to time a deep "vooh, vooh" came vibrating upon the ear; the people crossed themselves and prayed against the awful "scattering" shocks which blow the window panes to bits and send the small, round, porous stones clear above the mountain-top and down to the inhabited plain below.

The "delegate municipal," by courtesy called mayor, had sent alarmist telegrams calling for ships of war, and in the morning light a little trim torpedo boat came hurrying from Messina. Having made some observations, I assured the captain that the worst was past and that no danger was impending for ten days: after circuiting the island on his flyer, he left to report to his superiors.

Visits to the crater had the greatest fascination. I started in a heavy fall of ashes; and "Must we all die?" cried the old women as I passed. "And you are really going up on such a day? Then the Madonna be with you!" And they shook their aged heads, which had not been able to recall an outburst so terrific and so long drawn out as this one.

The ascent was not easy. We had to climb a hill [illegible] feet in height and partly clamber down the inner side: and the sun is hot in May. Arrived at last, a spot was found two hundred yards west from the crater's edge where observations could be made and photographs taken without much risk. The only serious danger was from the "scattering" shocks which already had covered all the mountain-top with splashes of [illegible] and had broken by concussion almost every window in the neighboring towns.

THE [illegible] ERUPTION

From this [illegible] the eruption was a glorious thing to see. Four of the eruptive mouths, all [illegible] in the central source and fed by [illegible] in the crater walls, were vomiting great [illegible] of fine ashes, sand, and lava rock. The [illegible] was a mighty, black spray [illegible] from the great source, and which was [illegible] in faraway Messina. In the [illegible] there was not one fiery spark, the [illegible] were all [illegible] without heavy detonations. The [illegible] locomotive puffing [illegible] and doing [illegible] work. But on a sudden all was changed. With a [illegible] roar and a cloud of steam the central conduit was blown free and went into action with all its might. The transformation was as complete as it was magnificent to see. No more black and dead material, no smoke *pino* rising to the clouds, no more smothered bursts of sound. Roar followed upon roar as the intensely heated gas, scarcely less vivid than the sun itself, tore its way upward from the mountain depths, while myriads of red-hot rocks and brilliant scintillating stars shot high above the crater's mouth and the heavy detonations, each stronger than the one before, shook all the ground beneath our feet. The guide, not daring to retreat, kept muttering at intervals: "It makes the flesh to tremble to be here!" But here was opportunity, here was work to do, and here we stayed until the crisis passed, until the mighty central mouth subsided into silence and all the other smaller vents awoke once more to action with the accompanying phenomena of this less audible, more visible, and less awful eruptive phase.

On our return the population was more calm. The *Inglese*, as they call every foreigner "had bound the crater with some iron bands and so there was no danger to be feared." You are not to think, however, that all men were so credulous. The *good* doctor said he thought that volcanology was all guess work, anyway. I ventured to reply that I had heard opinions as to his own profession which bore a certain resemblance to the one he expressed of mine. At all events, to visit a volcano in the midst of an eruption in two hours' time to trace a curve of its rhythmic, slow progression, to show the culmination part and forecast the next explosive phase would seem a practical result. In fact, upon a later date, after the same predicted phase had come and ruined the crop of grapes, and when warship had again been called for and obtained, I could assure the commandant that the whole eruptive period was past with no [illegible] and orders came from the Ministry for the withdrawal of the ship.

One night I [illegible] the crater from the sea. Fountains of [illegible] from the crater in [illegible] the height of a [illegible] feet; the fiery [illegible] a [illegible] [illegible] the [illegible] [illegible] the sea for [illegible] [illegible] of [illegible] [illegible] [illegible]

blue amid the universal red, then shot forth glittering tongues of flame with the sound of a thunder-clap and disappeared from view.

A trip by boat in circuit of the island showed that Stromboli to-day is not what once it was. I never visit a volcano without a realizing sense that ours is an unheroic age. One has but to see the most gigantic lava streams which, centuries ago, flowed down this mountain's sides, or to trace upon its summit the monster craters of the former years, to realize how feeble are its doings to-day. Excepting the outburst of Krakatoa, in the East Indies, our earthquakes and our eruptions are really "things of nothing" when compared with those of olden times; and civilization, after all, is responsible for nearly all the losses, both of property and of life.

So the volcano of Stromboli returned to its normal state—a continuous but mild activity—and regretfully I left the island for other scenes.

CAMPING BESIDE ACTIVE CRATERS

There is perhaps no calling which brings a more varied experience into the day's work than that of a volcanologist. For us the forces of Nature take their most diversified and active forms—fire, water, earth, and air combine in strange and unexpected ways to change the times and seasons and make the universe itself seem "out of joint." I have had nights of vigil transformed by a pillar of fire into noon-day brightness, and have had daylight hours turned to black night by showers of ashes and sand. In close proximity to a fiery crater column, I have shivered in an icy wind, drawn in from every side to feed that awful draught; and, far above the line of snow, where the cold should be intense, I have sweltered in dizzying waves of heat and skipped hot-footed on the burning soil.

The science is complex, including a little of astronomy, of chemistry, of physics, of photography, of geology, and even of languages. The work varies from patient waiting to the most violent exertion, and from making simple notes to the saving of human life. Between these extremes come the various occupations of scientific research—collecting gases for analysis, taking the giant's temperature, sounding his heart with that stethoscope of the volcanologist, the microphone, recording his respiration and the tremors of his mighty frame.

Often the observer's life depends on his judgment and experience. Take so simple a thing as crossing a moving lava stream. The partial cooling of the surface forms a sort of crust, made up of rocky bombs like cobble-stones. This crust is not rigid but is shifting constantly as it is carried along by the liquid interior, which can be seen through all the crevices shining with a fierce red glow. An error of judgment as to the place of crossing, or the least misstep, would be fatal; yet there is always a strange exhilaration in the novelty of the experience. It reminds one of crossing a glacier for the very reason that it is so different.

THE PERIL FROM FALLING ROCKS

Then there is the soldier's hardest task of standing still under fire; but here there is no enemy to fight and the bullets are falling from the clouds. I well recall one night during the eruption of Vesuvius last year; the Observatory was uninhabitable, for it was rocking as a boat upon the waves, and we stood outside with rolled-up overcoats upon our heads in a rain of stones. A carbineer, stooping to pick up a stone, dropped it because it was hot, and was promptly struck upon the head by another, fortunately not large; after that he stood erect as a soldier should. This overcoat protection was all very well against the rattling fire of small stones but when the calibre was increased we were forced to retreat. With six-pound rocks falling from the skies, we made our way where the smaller stones alone would reach us and there sat it out.

On Stromboli last May, I wished very much to reach a certain ledge of rock near to the crater's edge in order to obtain some records of the eruption which could be had only from that point. I asked my guide's advice and he said: "Well, if you go I will go with you—we'll die together." I said I would wait an hour and if nothing touched the ledge in that time we would make the venture. In less than ten minutes, there came an explosion which sent a million red-hot stones of every size up to half a ton's weight to at least 500 feet above the crater—and these fell squarely on that ledge of rock, bombarding every foot of it incessantly for several minutes. We smiled grimly at one another and postponed the project of visiting the ledge indefinitely.

ENVELOPED IN STIFLING GASES

We had an adventure on Vesuvius the mere remembrance of which makes me shudder. This time the gases were our foe—gases and

THE AUTHOR TAKING CINEMATOGRAPH PHOTOGRAPHS OF THE CRATER OF STROMBOLI DURING AN ERUPTION

A VOLCANOLOGIST COLLECTING GASES FOR ANALYSIS AT THE SOLFATARA VOLCANO, POZZUOLI, ITALY

MR. FRANK A. PERRET LISTENING TO THE SUBTERRANEAN ROARING OF A VOLCANO AT POZZUOLI, ITALY

ashes blown down from the crater by an easterly gale. Fifty persons—men, women and children—were gathered in with great difficulty to the barracks, which gave inadequate protection, and the problem was to reach the Observatory. This was only sixty yards away but the gases made the air almost unbreathable and the ashes produced a darkness that was absolute. We could not see our hands before our faces. If the eyes were opened they filled at once with sand and ashes, which were driven by the blast with such force as to make the lips

THE CLOUD FROM THE CRATER OF VESUVIUS ROLLING DOWN THE MOUNTAIN SIDE

bleed. Only sixty yards to go, but the road was covered deep with ashes like a desert is covered with sand, and, of course, no compass could be used for it could not be seen. All of the fifty were placed upon a rope and, with one end anchored to the barracks door, the head of this human snake would circle about until some familiar spot was found; then the tail

DIRECTING THE REFUGEES TO SAFETY
The volcanologist is often a life-saver as well as a scientist

A PIT-FALL FOR THE VOLCANOLOGIST
Easily overlooked in the darkness

drew up and the manœuvre was repeated until the Observatory gate was reached. Once inside, more dead than alive, every expedient to absorb the gases and to manufacture oxygen was considered, but no materials were on hand. We were forced to endure for eight hours those deadly gases and an atmosphere of floating ashes so thick that a lamp could not be seen across the room. But at midnight the blast subsided, and the gases were dissipated. Of the fifty refugees, all but one young man survived the terrible ordeal.

RIVERS OF REAL FIRE

During this same eruption, it was necessary to examine the lava at its source. To reach the place, we were obliged to pass under and through the crater-cloud of sand and gas, which came rushing down the mountain side with terrific force. Our little band, consisting of Professor Matteucci, myself, and three carbineers, was often unable to proceed. We were frequently compelled to wait for intervals of comparative light amid the thick darkness which enveloped us, and take advantage of these intervals to make progress toward our goal. When at last we emerged, the lava was in sight, winding down the mountain in huge smoking streams. The heads of these fiery

A PART OF THE VESUVIAN LANDSCAPE DURING THE ERUPTION
The cloud of falling ashes makes vision and breathing difficult

serpents, miles away, were crawling through vineyards, razing houses to the ground, and burning up everything in their path. But here, at the source itself, was a spectacle so sublime that all else was forgotten. An enormous fissure had been formed upon the mountain side, and from this opening the river of melted rock shot forth with incredible speed. The lava seemed to be as fluid as water; there were whirls and eddies and waves upon its surface, from which clouds of steam rose in curious shapes, illumined by an intolerable glare. The heat here was terrific—radiant heat from the incandescent mass of this beautiful river of death, heat that caused a pine tree to burst into flame before the lava touched it—and a nearer approach than fifteen feet from the brink was quite impossible.

And then, on a sudden, with a bellowing roar, the great fissure extended itself a hundred yards. The solid rock of the mountain side was torn as one tears a piece of cloth, and the white-hot lava shot a hundred feet into the air in sheets of liquid fire before it fell and doubled the stream. With the exception of an experience of dodging some two-ton boulders on the cone a few days earlier, this was the only time I have had to run away—and how we did run! I went back, though, and photographed it all.

INSPECTING THE CRATER OF VESUVIUS
Just after the great eruption

COVERING THE CABLE RAILWAY WITH SAND TO PROTECT THE RAILS, WHILE THE LAVA IS OVERFLOWING THE LOWER PART OF THE ROAD

THE VOLCANO OF STROMBOLI (NORTHEAST OF THE ISLAND OF SICILY) DURING AN ERUPTION

Showing the stream of sand and ashes descending into the sea

THE DAY'S WORK OF A VOLCANOLOGIST

THE CRATER OF STROMBOLI JUST BEFORE AND JUST AFTER AN EXPLOSION

COLLECTING SPECIMENS OF LAVA FROM THE CRATER OF VESUVIUS

As to the results which the volcanologist is working to achieve, there seems to exist a great deal of misconception. The average person will say: "Well, you cannot tell from what depth the lava comes, nor when Vesuvius began to be a volcano. You don't really know anything about it. It is principally guesswork. —now, isn't it?" Nevertheless, the aim of volcanology is an eminently practical one. For example, when I visited the island of Stromboli, the people were panic-stricken over the unusual violence of the volcano; windows had been smashed by the explosions and ashes were destroying the crops. It seemed as if the island itself might be blown into the air at any moment and the government was hesitating about transporting the entire population to a place of safety. At such a time, I was not concerned about the exact date, ages ago, in which Stromboli rose above the sea, nor with the composition of the earth's interior. When I could assure the authorities that the worst was over, that the culminating explosion had been on a certain date, that there would be another crisis at such and such a time but less severe than the preceeding ones, that no lava streams would break out and no great catastrophe was to be feared, a work of practical value was done. Space is lacking to explain in detail how these facts were learned, but they are the results of rational methods of scientific research. By the same means, we know that a great eruption of Mt. Ætna is impending and can be confidently predicted to take place within a year. Huge lava streams will flow for many weeks and may attain a length of ten miles or more, according to their direction; and the eruption proper will take place upon a flank of the volcano and not from the central crater, the only uncertainty at present being which side of the mountain will break open.

CLEARING SAND AND ASHES FROM THE OBSERVATORY STEPS, VESUVIUS

THE SEMAPHORE STATION AT STROMBOLI
Damaged by earthquake shocks

THE FRENCH IN NORTH AFRICA

THE RELATION OF THE TROUBLES IN MOROCCO TO FRANCE'S DREAM OF A GREAT AFRICAN EMPIRE

BY

CHARLES WELLINGTON FURLONG

With photographs by the author and others

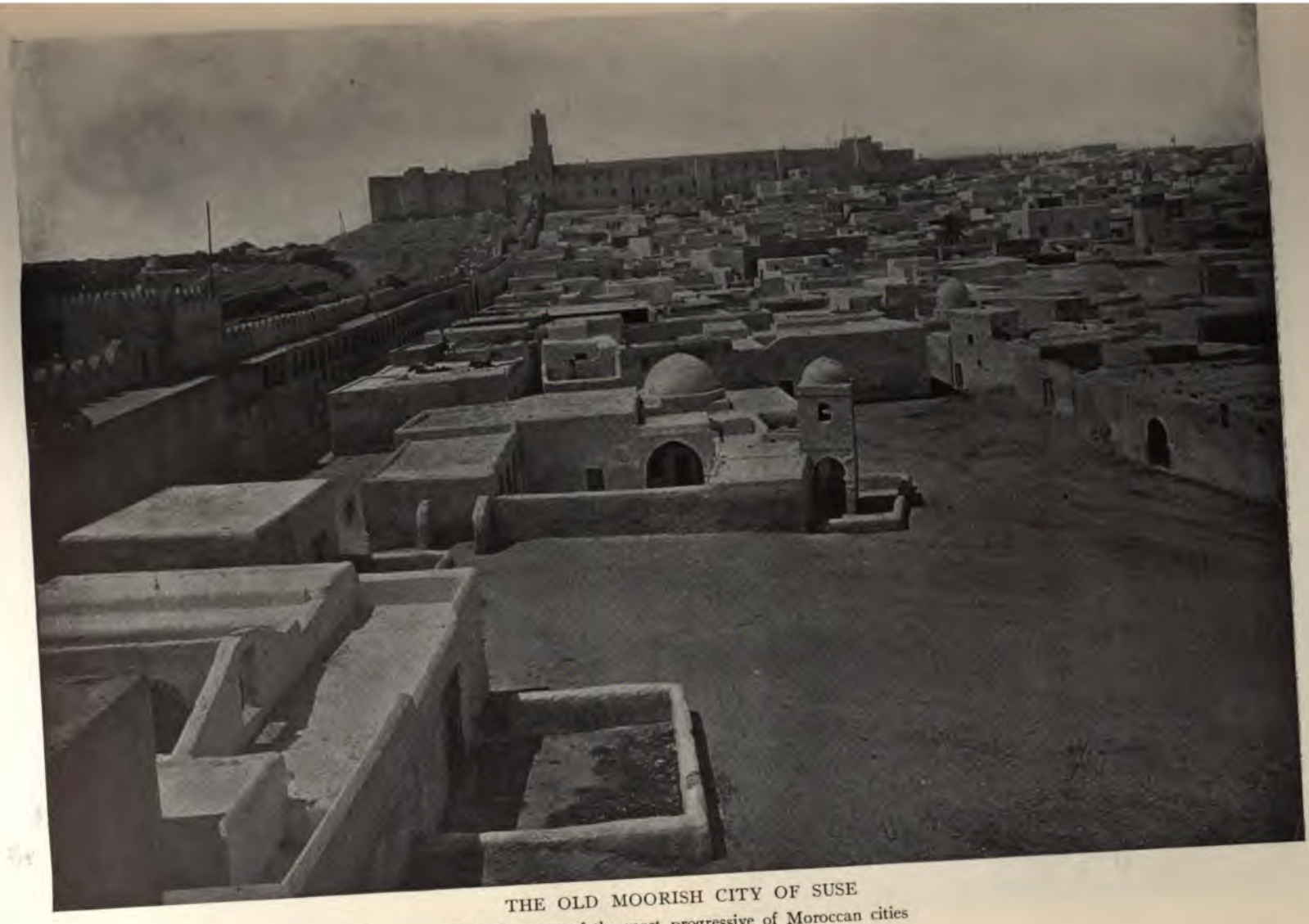
LESS than four years ago Morocco—in the mind of the civilized world—was a semi-mythical land, a far-off mirage of barren sand with a few palm trees dimly shadowed on the skyline of its hazy imagination. Then came that strange anomaly in brown dress, red fez, and yellow slippers, Mulai-Ahmed Ben Rais-Uli, one of the many men whom recent intangible events have left silhouetted on the horizon of international politics. Then followed with surprising rapidity the Anglo-French treaty, the German *coup d'état*, the Algeciras conference; and now the boom of big guns under the very windows of civilization causes the world to sit up and rub its eyes. It awakes to find no sun-scorched desert reaches, but a hilly country, fertile and promising, abounding in mineral wealth and rich pasture lands—the golden orange of Africa.

Almost touching the southwestern finger-tip of Europe, Morocco has been one of the last countries to elude its grasp. The Frank, however, for more than half a century has been nibbling off the edges of its southeastern boundary, and now we find him on the northwestern coast, eager to begin the invasion of the interior. Ever since the Red Cross knights planted their flaring standards over Acre and Ascalon, and St. Louis raised his banners on the heights of Carthage, Frank has been the

A MOROCCAN TRADER'S CARAVAN ON A DESERT ROAD

ALGIERS, THE CHIEF COMMERCIAL CITY OF THE BARBARY STATES

It is an illustration of what the French will make of Tangier and the other North African cities



THE OLD MOORISH CITY OF SUSE

It is now one of the most progressive of Moroccan cities

THE AUTHOR AND HIS RIFFIAN GUIDE
Mr. Furlong is the man with the hat

TYPICAL MOORISH SHOPS
Every kind of industry is stagnant, both in country and towns

synonym of European to the Orientals of North Africa.

When France's policy of territorial acquisition throughout Africa is correlated and surveyed as a whole, one may well be astounded at its wonderful foresight and the stupendous character of its scheme: a scheme which undoubtedly was that of bringing about the eventual acquisition of more than two-thirds of the entire continent of Africa. How near it has come to doing this may readily be seen.

The accompanying map will convey an idea of the vast territory which is actually colonized by France or which is recognized as within the sphere of French influence—a territory almost equal in area to that of the United States and including a population perhaps more than a quarter as large. It is evident that its plan has been to acquire as much territory as possible along the Mediterranean, down the Atlantic seaboard to the French Congo, thence across Central Africa to Egypt, and from these

A GLIMPSE OF THE COUNTRY BETWEEN TANGIER AND MOROCCO

A MOORISH QUARTER OF THE FRENCH CITY OF TANGIER
The bazaar between the inner and outer gates

THE SPECTACULAR "POWDER PLAY" IN THE MAIN STREET OF TANGIER
The architecture and the signs show that it is now a French city

TYPES OF NATIVE ALGERIAN SOLDIERS
The men behind the French guns

footholds to converge toward the central Sahara. Its influence in great sections of the Sudan and Central Africa was promulgated mainly by missionaries, particularly the White Fathers. These men, under Cardinal Lavigerie, commenced their crusade against slavery "for France and the Church" in the late 'forties, and at the sacrifice of life and health

FARMERS OF THE RIFF COUNTRY ON THEIR WAY TO MARKET

crossed the sun-scorched sands of the Sahara and penetrated the miasmic, fever-laden jungle of the Sudan and Central Africa to Nyanza, Tanganyika, and Nyassa. Even in Egypt, France spared no pains to increase its influence and impress the native. Behind the French missionary came the French explorer, the trader, and the soldier.

The last three years of the nineteenth century and the opening of the twentieth saw three famous French expeditions in the North African field. A remarkable one—ostensibly scientific in its aim—under M. Fernand Foureau,

THE COURTYARD OF A MOORISH RESIDENCE

reached the great desert capitals on the trans-Saharan caravan routes, Air and Zinder, and pushed on to the regions beyond Lake Tchad and the country of the fierce Rabah, the Mohammedan ravager and conqueror. Here Foureau was joined by an expedition under Lieut. Joalland from the west, and another under M. Gentil from the south. The union of these three expeditions established French control over that territory, thus connecting the French possessions of the Sahara through the Tchad regions of the Sudan with the French Congo. No European power seriously hampered

THE PORT AND ANTIQUATED FORTIFICATIONS OF TANGIER
Situated on the Strait of Gibraltar, Tangier is a convenient health resort and has a population upward of 30,000

THE MOORISH BOULEVARD OF TANGIER
Like other Mohammedans, the Moor clings to the past

MOROCCAN TRADERS IN GIBRALTAR

A CHRISTIANIZED MOOR AND HIS WIFE

this eastward movement through the Sudan until certain French operations reached the upper valley of the White Nile, under another and most important expedition commanded by Colonel Marchand.

It started from the upper Ubangi, in the French Congo, and moved eastward to join the force under the Marquis de Bonchamp, who advanced from Abyssinia westward to meet him in the upper Nile basin. The object of this expedition was essentially a political one. French aims in Lower Egypt being blocked by Britain, a footing in Upper Egypt would not only strengthen its position there, and perhaps through Abyssinia eventually give France an outlet to the western coast, but would block Britain's plan of an empire from the Cape to Cairo. At Fashoda the west-east trail of the Gaul crossed the north-south course of the Saxon—two stupendous schemes of

A SNAKE-CHARMER IN A STREET OF TUNIS

The circle is a curious mingling of races, of both sexes

empire diametrically opposed to one another. One had to give way—but which?

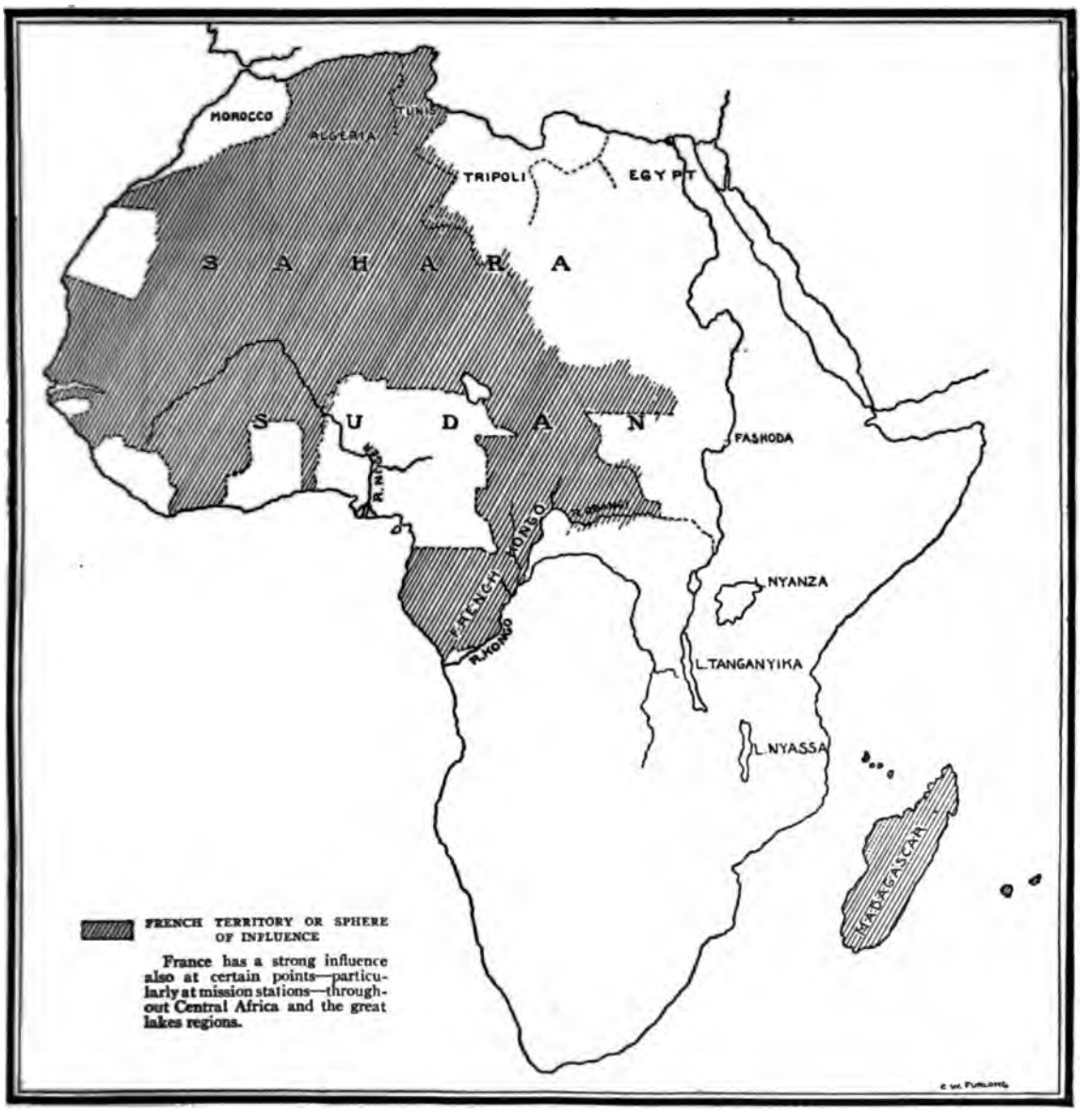
General Kitchener, flushed with the victory of Omdurman, dropped anchor before Fashoda and announced to the French commandant that he had come to plant there the flags of England and Egypt.

Colonel Marchand pointed to the French flag already flying, and regretted to inform General Kitchener that he had been anticipated.

General Kitchener replied that Britain had only temporarily abandoned the Sudan; and he would be pleased to give Colonel Marchand and his men a safe passage down the Nile.

Colonel Marchand smiled and declined.

The English commander rose and pointed



MAP OF AFRICA SHOWING THE EXTENT OF FRENCH COLONIZATION

The dominance of France in Lower Egypt was checked by England in 1882; French influence in Upper Egypt was stopped at Fashoda in 1904. The boundary lines along the Congo and in the Central Sudan may some day lead to conflict, when the commercial interests of individuals of the two countries clash.

to his vastly superior force. "What can you possibly do against these?" he asked.

"Die!" smiled the commandant.

General Kitchener stood for a moment in silence, with the peace of two continents in his hand.

"There is no need for that," he said. "Your government sent you here; your government will call you back. Let us wait and see. Have a whisky and soda!"

Diplomacy did the rest. Colonel Marchand was recalled and the Tricolor was replaced by the Union Jack.

The fact that this affair engendered the bitterest feelings and all but involved the two Channel nations in war goes far to prove the importance, to each, of the strategic value of that territory. Blocked at this point, France seems to have redoubled its efforts in Morocco. Since the fortifying of Gibraltar and the opening of the Suez Canal by the British, Morocco has been more than ever a desirable possession to the Powers, particularly to Great Britain and France.

French intrigues and attempts to create a paramount French sentiment among the Moroccans were most successful. Constantly, consistently, France picked up the threads Great Britain dropped and wove a network of schemes about its quarry—extending its schools, its protection policy, its government loans, its influence, and its western Algerian border-line whenever opportunity offered. The revolution of the Moroccan Pretender in 1902–4 brought about conditions which were considered so to imperil the lives of the hated foreigners that some protection seemed necessary. By a strange coincidence, the time also seemed ripe for an understanding as to first claims on Al-Mogreb, the Land of the West, and the claimants naturally dwindled down to Great Britain and France.

THE TREATY BETWEEN ENGLAND AND FRANCE

Then came the Anglo-French treaty of 1904, far-reaching in its geographical and political significance; it adjusted all unsettled territorial questions upon which Great Britain and France differed. Strange as it may seem, the very nation which thwarted France at Fashoda now gave it a privileged position in Morocco for certain concessions regarding Egypt. One of those clauses not only leaves it to France to carry out all administrative, economic, financial, and military reforms required to preserve order in Morocco, so long as British treaty rights are left intact, but Article IX. reads: "The two governments agree to accord to one another their diplomatic support in order to obtain the execution of the clauses of the present declaration regarding Egypt and Morocco." Thus it has come about that France has instituted military proceedings on the western coast without even a frown from Britain, and as yet no protest from any other power.

Trace on the map southeast down the Atlantic seaboard of Morocco and, lying 200 miles from Tangier, you come upon a little seaport town of sun-dried bricks, wood, and whitewash, with the town walls and some important buildings in the European quarter of stone: Dar-el-Beida, the Arabs call it; Casablanca say the Spaniards. Here France found its *causus belli* in a mob outbreak and lost no time in following up its advantage by landing a force numbering more than 7,000 troops.

For years the unsatisfactory conditions have increased the dangers of travel and stunted the natural resources and trade of the country. These conditions are due mainly to the radical ideas of the Sultan and his inability to organize and control his people, who in character are courageous, cruel, and somewhat stoical, yet at times childishly impulsive and easily swayed to rebellion or war by some fanatic. The spell of Mohammed is strong upon them.

THE HELPLESSNESS OF MOROCCO

The Moroccan fighting force consists only of small tribal detachments of irregular infantry and cavalry, fighting with the same irresponsibility and wild dash of their fathers of the deserts, with no available artillery and, aside from some members of the coast tribes, possessing few modern weapons of warfare. So tribal is their present organization that probably nothing short of a general invasion by a common enemy would cause them to cast their lot as a nation against a common foe. Under the present unstable and avaricious government, where the strong prey upon the weak and it is as dangerous to be rich as to be poor, tribal protection is the only safeguard to the Moroccan; naturally, those tribes whose territory is not actually invaded or who live far back from the scene of hostilities either care nothing about it or are loth to send their fighting men to the scene of action and leave

their women and homes an easy prey to neighboring hostile tribes.

No one who knows anything of the French policy in Algeria and Tunis can accept without reservation the reports of the bombardment and invasion of Casablanca. Flaring headlines announce plans to massacre all Christians, to drive "the infidels" into the sea; the European quarter is threatened; tribesmen are gathering in the hills in overpowering numbers and the irresistible tidal wave of uprising is about to break forth. It is safe to say that the French press has colored these reports.

That there was an aggressive element among the Moors, there is no doubt; but with the promise of the Moorish governor of Casablanca to maintain order, a strong French guard at the consulates and city gates would probably have met all immediate need of protection. Instead, a large French force aggressively entered the town to quiet the rioting, and not only the suburbs but the town itself was shelled by the warships.

This naturally precipitated matters, for the news spread like wildfire that the long contemplated invasion of Morocco by the hated French had begun. The farmer tribes, with Algeria, Igli, and Figuig fresh in their minds, gathered their bands together and hastened to the coast. With what result? A few French soldiers were killed and wounded, while hundreds of Moroccans were slaughtered before the machine guns and shell-fire of the French.

MOROCCO'S FUTURE AS A FRENCH COLONY

It is the beginning of the end for Morocco as an independent country. France seems to have chosen the psychological moment to definitely continue its inevitable acquisition of Morocco. Europe is admirably adjusted to this end. Britain's recent understanding with Russia and Austria, France's own regard for Italy's interests in Tripoli and its control of Spanish finances leaves Germany alone in the opposing field. And it is safe to predict that the previous forced European policy of mutual, jealous forbearance toward Morocco is at an end, and another decade will see Moroccans using "inventions of the devil" and the country prospering.

A glance at Al-Mogreb, the Land of the Evening, will perhaps show just who these people are and explain the meaning of the various names given them. The original inhabitants were the Berbers, a white race, probably of Semitic origin, whose descendants (an agricultural people) still make up the majority of the hill tribes. Besides these are the Arabs, whose fathers overran and conquered North Africa and extreme western Europe in the seventh and eight centuries and established centres of learning and civilization in Spain and Morocco, when our own ancestors were the barbarians of the North. There are also Blacks from the Sudan, both slaves and freemen, who have drifted northward.

THE PEOPLE OF MOROCCO

Intermarriage of these various Mohammedan tribes and races has given a complex and mixed population. The Moroccan is truly a study in brown; he varies in tone from the darkest Negro to the light Caucasian, for the blood of Saxon captives of one or more centuries and of members of the modern European colonies courses in the veins of many a devout son of Islam who oft through the day offers up his prayers to Allah, thanking him that he is what he is and not as yon Christian dog. The term Moroccan means any recognized inhabitant of the country, while the term Moor, strictly speaking, means a town-dweller, and is so used throughout Barbary.

Moroccans have told me that they had modern rifles and ammunition (not only for themselves but for their children), buried in the hills; and I have seen Moors spit at and curse sailors of the French warship *Galilee* as they passed by the coffee booths in the Suk-el-Chico of Nazarene-ridden Tangier.

Three years ago I ventured to predict the futility of the French "*pénétration pacifique*" of Morocco. But not until much more blood is shed and the sacred mosque of Djidid in Fez falls like that of Sidi Okba at Kairwan, under the French civil governor, will the country begin in earnest its march to civilization—to the tune of the Marsellaise.

As one goes westward from Tripoli, that land of beautiful sunsets and the terrible sandstorm, through Tunisia and Algeria, the altitude and range of the Atlas Mountains increase, the water supply becomes more plentiful, the soil more fertile, and the climate cooler—until in strange, fascinating Morocco are lavished the richest gifts of nature. If Hadji Mohamed, with crude wooden plough and no other means of transportation than his donkey and camel, hampered by unheard of Sultanic mandates

and internecine strife, exports annually $20,000,000 of produce, the possibilities of this land under so scientific and thrifty a people as the French can hardly be estimated.

For some years past the French signs "*Rue de* ——" have indicated to the stranger his way among the narrow, picturesque alleyways of Tangier and other towns. Soon the Algerian railroad will thrust its antennæ on to Tetuan and Fez; then will begin the regeneration of Morocco by the French—but for the French.

THE FRENCH POLICY IS CONSTRUCTIVE

French policy in Tunisia and Algeria will serve as a good criterion by which to forecast the future of Morocco. The narrow streets, mud walls, and sun-dried bricks will give way to broad boulevards and modern houses, the cry of the donkey driver to the squawk of the electric tram, the wild mountain trails and river fords to splendid roads and modern bridges, the hand-flail of the Arab farmer to the steam thresher, the fallow land of mountain and valley to extensive plantations and beautiful châteaux.

Also will come the evils of civilization, to sharpen the Arab's wits and dull his scant morality. France will carry out in Morocco, as in Algeria and Tunisia, a discriminating policy—not only against the Arab but against all who ply their trade in Morocco who are not Frenchmen. This has been its policy in North Africa and there is no reason to believe that it will stop at the Moroccan boundary line, despite certain conditions of the Anglo-French treaty. Not for the same reason are we to suppose that France will refrain from fortifying or using as naval bases certain towns on the Moroccan seaboard.

Planted squarely across the path of the French invader, Rais-Uli (*rais* meaning "chief") is to be reckoned with before Morocco yields to civilization. He is a picturesque character, with a history full of romance—and is the most attractive leader in Morocco. Born in Tetuan, with a lineage running back to Mohammed, he early became a thorn in the Sultan's side and was shut up in the prison pest-hole at Mogador. He bears to-day the marks of the shackles. Escaping from prison, he was stricken with sun-blindness and was recaptured. He escaped a second time and became a brigand. But Rais-Uli was no ordinary robber. His power even outmatched that of the Sultan, from whom he has wrested many unwilling concessions, including the settling of many old scores against court officials.

To-day, in his mountain stronghold, this Moroccan aristocrat, this writer of classical Arabic in a beautiful hand, this cut-throat and freebooter laughs at the threats of the Sultan and the protests of the legations. He has risen to the distinction of an International Episode.

THE RECLAMATION OF THE SAHARA

The productive character of the Sudan and Central Africa is well known; but of the Sahara—what of those great, limitless, sun-baked, desert reaches?

The French, to some extent, will reclaim it; that which they do not reclaim will be necessary to them for commercial and political reasons. That which is reclaimed for agricultural purposes will be so done by irrigation—through the artesian well and the conservation of vast water supplies during the rains.

The desert is diversified in its character—great rugged mountains, plateaux lands, and the seemingly endless sand reaches. In the spring the mountain sides and plateaux lands to the north are covered with a wealth of flora and some of the sandy plains are covered with a rank grass and thorny plants.

That the artesian well will play an important part there is no doubt. Its possibilities may be appreciated when we take, for example, a single well sunk in the barren sands of the Tunisian Sahara, perhaps more than twenty-five years ago. This still throws a crystal stream twenty-five feet into the air and has developed and irrigates an oasis 500 acres in extent.

When France has added to its African colonies the 170,000 square miles of Morocco and assimilated to some extent the 9,000,000 of people, it will have won one of its greatest diplomatic contests, its richest colony, its most valuable strategic position in the Mediterranean. The Moroccan on the whole will benefit by French colonization: military protection will safeguard his interests from warring tribes; regular wages, schools, and courts of justice will be some of the things which he will obtain in exchange for the sacrifice of his country and his wild independence, in this last crusade of the Frank; and France will administer lessons to him in "*liberté, égalité, fraternité,*" and continue to give its attention to the realization of its dream of an African Empire.

ART GALLERIES FOR THE PLAIN MAN

THE WAY IN WHICH MUSEUMS OF ART ARE MADE ATTRACTIVE AND INSTRUCTIVE TO ALL CLASSES OF PEOPLE

BY

ROLLIN LYNDE HARTT

THE picture morgues" — a phrase lately applied to art museums by an editor skilled in addressing the Plain Man — had the vice of all cleverness. It had also the merit of all cleverness. It distorted the truth, but reached its audience. The Plain Man acquiesced, especially when the editor remarked, "We wonder whether the time will ever come when a great art gallery will cease to be a great weariness. The ordinary visitor to an unfamiliar museum comes out with his legs aching and his head in a whirl; and it is precisely for the ordinary visitor that the big public art galleries are supposed to exist."

Such criticism, though welcomed and applauded by the Plain Man, is fast running out of date, as the editor ought to know. The so-called New Museology has not only won theoretical acceptance throughout America, but practical application in the regenerated Metropolitan under Sir Caspar Purdon Clark and in the admirable plans for re-housing the Boston Museum of Fine Arts. Both institutions have of late experienced a radical change of heart, setting an example to museums far and wide and showing the Plain Man that his wail has been heard. A new spirit, armed with a new science, now controls their governing boards.

Such criticism, welcomed and applauded by the Plain Man, has fortunately its echo within the councils and governing boards of the museums themselves. Aristocratic, hitherto, they are rapidly becoming democratic. Instead of scolding the Plain Man for so rarely crossing the threshold of the splendid treasure house, they are scolding themselves for so feebly attracting him. They have taken pity upon his aching legs and whirling head. They have attained a new point of view, no longer regarding a museum as a mere shelter for art objects, but thinking of it primarily as a place where art objects can be easily and comfortably seen, enjoyed, understood, and put to practical uses by the Plain Man. Meanwhile, they espouse the interests of students, connoisseurs, and experts, though these concern them less vitally than formerly, for they seek first the popular response and support which eventually produces students, connoisseurs, and experts. Their essential effort is to stop all talk of "picture morgues."

The new Boston museum, for instance, will enable people, even average people, to look at works of art without undue tax upon legs and heads. Its vast new building will be really a group of small buildings, all under one roof. The Plain Man will conquer it piecemeal — to-day a gallery of paintings, next week a gallery of sculptures, a month hence a gallery of textiles. A single visit will exhaust a single section of the museum without exhausting a single visitor.

"Strange," you comment, "that nobody ever thought of this before." No, not strange. Museum architecture is one of our newest sciences. The bulk of the world's art collections have been housed in buildings not originally designed for the purpose — in ancient palaces, mostly. Moreover, the early American exploits in museum-construction were based upon a mistaken theory — mechanical instead of psychological; they aimed primarily to hold the treasures, only secondarily to delight the people. So it came about that so simple a matter as lighting got inadequate attention, whereas the new Boston museum will be lighted upon principles determined by two years of patient experimentation on the spot. Neither was there adequate provision for the natural human desire to sit down, now and then, when looking at pictures; the Metropolitan, as modernized to-day, is in this respect commendably merciful. Nor could the museum then fling wide its doors on Sunday, though that was precisely the day when the people were at leisure; now every great gallery is thronged

upon Sunday afternoon, and the next step will be to invite attendance on Sunday morning and on every evening in the week.

But the most beneficial of changes is still in the stage of talk — though, judging by the ferocity of the talk (for few quarrels have caused more earthquakes, tornadoes, and volcanic eruptions in the museum world), practical results will soon be reached. Question: Should a museum be æsthetic or didactic? In other words, should it arrange its collection so as to yield a maximum of beauty, or so as to yield a maximum of instruction? Should it aim to delight the eye and to cultivate artistic taste, or should it aim to inform the mind and teach the history of art? Naturally, any museum, if crammed with masterpieces, will be at once æsthetic and didactic, to a degree; but have we not sacrificed beauty, both needlessly and harmfully, in our effort to honor history?

Here the Plain Man and the æsthete agree — a pretty rare coincidence! They say that we have arranged our treasures as if they were so many fossils or stuffed animals, regardless of how they would look. Nobody quarrels with the scientists' definition of a perfect scientific museum as "a complete series of labels, illustrated by specimens." But many are they who resent the application of that definition to a museum of fine arts. They find in its adoption the chief reason why so few people visit the great galleries. They insist that there is wicked waste in robbing art treasures of the splendor which each might receive from a grouping that would give it a place among neighbors so selected as to enhance and glorify its magnificence. They want us to forget the dead and remember the living; to think first of the human heart and the human eye, and thus to make each hall a palatial marvel, with paintings, sculptures, tapestries, and varied art objects combined with a view to yielding the very maximum of æsthetic pleasure. They draw an argument from the superb effect attained by Mrs. John L. Gardner's arrangement of her collections in her Italian palace in Boston; they draw an equally convincing one from the harmonious blending of sculpture, architectural beauty, and the glow and charm of mural painting in the great libraries of Boston and Washington. Further, they cite the motives that prompt the production of works of art; no artist paints a picture or fashions a statue with any consideration for its future historical interest. To call his achievement a "specimen" and coldly give it place in a row of its contemporaries does violence to its very reason for being. Besides, it bores the Plain Man, while maddening the æsthete.

What then? Shall we content the human heart and the human eye at the expense of the human intellect? The history of art lends interest to many works that are singularly devoid of beauty; it lends added charm to works of great beauty; it is enlightening and practically useful in itself; it makes for sound taste, and enables us moderns to avoid innumerable inconsistencies and follies all too accessible to historical ignorance. It was Ruskin who, by arranging London's National Gallery chronologically and geographically, set the fashion since adopted by art museums the world over. Such an origin and such a consensus of support may well encourage æsthetes and the Plain Man to think twice before denouncing the custom.

Clearly we have here a question where "a good deal is to be said on both sides" and where the reasonable solution is some form of compromise. There is absolutely no reason why a museum should not devote several sumptuous halls to a supreme display of sheer beauty, with every other consideration subordinated to the joys of eye and heart. What if this means looting the "didactic" halls of their most magnificent possessions: their places can be taken there by photographs and reproductions, so as to leave the series unbroken. A card on each copy thus substituted for an original would indicate where the original had been placed. In this way the historical ideals of the museum would be realized practically as effectually as at present, and its æsthetic ideals would be realized incomparably more effectually. The Plain Man would cease applauding an editor for writing of "picture morgues," for they would then have become irresistibly attractive — in part, at least. Indeed, he could be trapped into tramping through the chronologically arranged galleries on his way from one "æsthetic" hall to another. Thus he could hardly avoid picking up a modicum of useful intelligence.

If the Plain Man is to be educated — and his education is held by the museums to be not only possible but necessary — why shouldn't he be got hold of by a little harmless newspaper advertising? The museum might wisely play for publicity — to which end there should be frequent evidence of something interesting. Not mere "accessions": these get small notice.

Loan exhibitions, on a really impressive scale, will command column after column of newspaper space. Suppose New York exchanges a hundred paintings with Chicago, or Pittsburg a hundred paintings with Buffalo, or Boston a hundred paintings with Cincinnati: the press will tell the Plain Man he is missing a treat if he lets slip the opportunity. As it is, he thinks of an art gallery as something stationary, or growing very slowly. Having visited it once, why should he visit it again? The loan exhibition idea, already adopted in a modest way and yielding excellent results, deserves adoption far more generally and upon a far vaster scale. It means death to the myth of "picture morgues."

Lately the Metropolitan and the Boston Museum of Fine Arts have begun to publish periodical bulletins, of value to students and connoisseurs. The Boston institution, on adopting the plans for its new building, went a step farther and engaged a local publicity bureau to insert announcements in hundreds of newspapers and descriptive articles with illustrations in scores of others. Here you have innovations whose logical conclusion is the press agent, who will devote his entire energies to interpreting the museum from the Plain Man's point of view in the Plain Man's Sunday paper.

PAINTINGS OF HUMAN INTEREST

Furthermore, the museum may profitably concede a point or so to the Plain Man's taste by discarding any notions it retains about "art for art's sake," which dogma is discredited at present by numerous authorities, including the Metropolitan's director, Sir Caspar Purdon Clark. A picture, according to the art-for-art's-sake theory, must never tell a story — and the only pictures the Plain Man deeply cares for are those that do. He is bored by mere arrangements in color, mere experiments in aërial perspective, mere solutions of problems in tone and values, mere technical triumphs in impressionism. He wants a picture *of* something or *of* somebody — a mother and child, a battle, a race, a scene from a play, an event in history, a fair, a temple service — a picture alive with human interest. Why not let him have it? The advocates of "art for art's sake" were right when they taught us to despise bad pictures that told good stories, but few intellectual humbugs surpass their insistence that art has to do only with visual delights and must never appeal to the emotions by treating a dramatic theme, and few philosophic swindles can equal their denunciation of eminently good pictures just because they tell eminently good stories. Sir Joshua Reynolds used to say to his pupils at the Royal Academy that the first essential of being a great artist was a genius for choosing great subjects. And the great subjects all have human interest; they all tell stories; they all touch something responsive in the Plain Man — which is why they have all been treated by the greatest painters, from the Old Masters down. Accordingly, when a museum seeks to educate, it must see to it that its story-telling pictures get due prominence. Never mind if the Plain Man admires their "literary" quality and ignores their artistic qualities; the way to cultivate his taste is first to put him in an admiring mood. On the other hand, if we allow pure technique to hold predominance in a museum, we antagonize the very people who most need to be educated.

LABELS FOR THE PLAIN MAN

Having contrived the utmost possible enjoyment for the Plain Man and thereby brought him within range of instruction, the museum can afford to ask itself what he can be told — and how — about the art treasures. Thus it will abolish the catalogue and rely wholly upon labels. The Plain Man believes that he came hither to see with his two eyes (and all the while) the beautiful things exhibited; he perceives the folly of spending half his time digging up references in a handbook. Provided he has purchased the catalogue at all, he soon casts it aside — and with it the key to a whole world of knowledge. A part of the pictures already bear labels — title, signature, date — why should not all? An enormous collection of art objects is confusing at best and more or less of a mental strain. Why add the infliction of a chase among the numerals for an explanation of them — especially for an explanation which, to the average victim, fails to explain.

In one sort of catalogue — the elaborately annotated kind — even the Plain Man can see sense. Every American museum needs a counterpart of Edward T. Cook's "Guide to the National Gallery." Its author leads you through London's splendid museum, room by room, school by school, epoch by epoch. He tells you what forces — economic, political, social, and psychological — produced each type of art. He gives you the information you want

about individual artists. He quotes what authoritative critics have written about individual paintings. You may take the book with you to the museum and refer to it when you like. Better, you may read before you go his interpretation of the portion of the collection you have selected as material for the morning's pleasure.

BOSTON'S "PERSONALLY CONDUCTED" MUSEUM

Yet perchance the Plain Man will prefer oral instruction, with a chance to ask questions. In the Boston Museum of Fine Arts, a docent now spends all his time prowling the galleries with a string of visitors at his heels and telling them about the works of art. Thus far, the experiment has succeeded admirably, though it at first seemed somewhat hazardous. Unless possessed of rather unusual gifts, a docent may bore his followers nigh unto death, leaving them convinced that a fine ignorance of things artistic is the summit of inspired wisdom. Nevertheless, the risk is worth taking, since the aggrieved visitor can always "cut and run" if bored beyond endurance, and since a successful instructor makes a gallery doubly efficient as a force for popular education, especially in æsthetic taste, for the instructor ought to be more than a simple retailer of facts and dates.

Just here, I imagine, we run some danger of parting company, in our discussion, with the Plain Man, who can't quite see the practical value of educating people up to an appreciation of the subtler forms of beauty. "Of course, I don't know anything about art," says he, "but I know what I like." He grants an equal independence to others. He wonders why people talk so solemnly of artistic standards. To such opinions as his you may oppose a merely commercial argument. Let him regard art as a business — not merely the business of making pictures and statues, but also of making beautiful furniture, elegant china and porcelain, superb glassware, exquisite jewelry, and a hundred other splendid sorts of manufactured things, in whose production we ought to excel, and for whose masterly production a high degree of æsthetic culture is indispensable. And the museum holds a foremost rank among educative forces in such directions. Its treasures are a daily object lesson, both in design and workmanship. To make them the more efficient, the museums — the Metropolitan especially — are granting any visitor liberty to sketch or photograph any object there exhibited, barring only the reproduction of certain paintings which are either copyrighted or denied the copyist by their owners. Thus the designer of glassware has the best Murano at his disposal, the illuminator of books an array of fifteenth-century missals, the metal-worker the noblest achievements in gold and silver, brass and iron, that the ages have left us. In this there is inspiration; also a world of technical suggestion, beside an opportunity to do over again under modern conditions almost literally what they of old time contrived to do. The result will be a growth of intelligence, taste, and delicacy that will stamp themselves upon American goods and win them an ever-increasing market the world over.

THE TARIFF ON WORKS OF ART

Moreover, the Plain Man will appreciate the folly — if merely from the business point of view — of banishing large numbers of students from America, which is just what we are doing at present, owing to the inferiority of our museums as compared with those of Europe. In order to become a brilliant sculptor or painter you must have prolonged and intimate contact with the great masterpieces of sculpture and painting. They abound abroad. Here they are rare — rare, mainly because of the tariff. Not that we tax the importation of works of art for public galleries; we have not descended to that level of imbecility; but we tax their importation by private collectors, which comes in the end to much the same thing, since private collectors have a way of presenting or loaning art treasures to the museums or of leaving them as legacies to the public when they die.

The bill to remove the duty on works of art will presently come up again in Congress. It deserves universal support. The artists, whom that duty was designed to protect, unanimously denounce it, for it harms instead of helping them. The private collector finds it oppressive; the dealer finds it almost prohibitive. The Plain Man, when he traces its effects, sees that a whole army of young men and women, driven out of America for months or years at a stretch, spend in Europe what they ought to spend here. Sir Caspar Purdon Clark, seeking a compromise likely to be acceptable to Congress, suggests that to remove the tariff upon works already a century old would bring no very serious strain upon the protectionist gospel, while at the same time it would greatly benefit students, artists, dealers, connoisseurs, and the public

museums. Some such mitigation of the present unreasonable and injurious severity is bound to come. When it does come, America, the richest of the nations, will enter upon an era of art importation which will make our museums as magnificent, in time, as any beyond the sea. In that day the tide of student travel may actually be reversed; and the Plain Man, long indifferent to his country's progress in matters æsthetic, will take pride in its new preëminence.

Meanwhile, let us see to it that visiting foreigners find in our museums an adequate exhibition of works by American masters. It is now the complaint — both by foreigners and by directors of the museums themselves — that such is not the case. When Camille Saint-Saëns returned to France last year, he reported that, despite all obstacles to their importation, the best pictures by the French painters of the nineteenth century were to be seen, not in France, but in America: where in America is there as representative a display of masterpieces by native artists? We have looked with indifference upon the growth of American art. Some have thought it an evidence of culture to speak disparagingly of our artists. To-day they are lionized in Paris.

About imported pictures there is inevitably something alien. Travel, reading, and a knowledge of the past help us to understand them. But the work of our own best men, unless they have deliberately expatriated their genius, needs no interpretation. The Plain Man can appreciate it and enjoy it. It finds him. And the museums, by affording an additional market for that sort of art, will further encourage its production.

AN ENGINEER WHO MAKES SEA-PORTS

MR. ELMER LAWRENCE CORTHELL, WHO HAS SUPERVISED A HUNDRED MILLION DOLLARS' WORTH OF HARBOR WORK

BY

DAVID F. ST. CLAIR

DON'T tear up your tracks; the sea at Tampico must surrender."

These were words of a man standing at the elbow of the president of the Mexican Central Railroad, who saw disaster facing his great terminals at Tampico.

"Don't waste your money in dredging; I will force the sea to give you two great water-gates to the heart of the continent." The man speaking was Mr. Elmer Lawrence Corthell, an engineer with a record of remarkable achievements.

Mr. Corthell's resolute and uncompromising spirit showed itself while he was yet a boy. His maternal grandfather, a wealthy manufacturer with a fondness for theology, had promised the boy a college education. But a controversy arose in the village church, and the lad voted against his grandfather. This so angered the old gentleman that he told young Corthell that he might expect not a cent of his money.

The boy tightened his lips and sought out his father, a shoemaker by trade, who had taught him between school hours to peg shoes. "I want to borrow $15," he said, "I want a kit of shoemakers' tools." From his mother he borrowed two flat-irons. With this equipment he went straight to Phillips Exeter Academy, and over the door of his room he posted this double sign: "Washing done here; Boots and Shoes Mended."

This is the boy who stood in the breach with James B. Eads at the mouth of the Mississippi; who counselled Dom Pedro, the Emperor of Brazil; who has opened two and is now opening a third great port to the Western Hemisphere; who has done a hundred million dollars' worth of deep-sea work that has added a billion dollars to the world's commerce. He is Neptune and Archimedes with clasped hands, the sea and land met in friendship to man.

And yet this grim, silent, master of deep-sea forces is hardly known beyond the confines of his own profession. The very obscurity of the man lends mystery to the magnitude of his work.

"All my life, I have been trying to find bottoms for deep jetties in great rivers," he says, "trying to keep mountains from sliding down on the tracks of railroads, fighting with the sea and its tempestuous waves, compelling rivers to dig their way to the deep for the benefit of commerce. For forty years I have been doing this. Nature has been my companion, my friend, and my enemy. Mankind has been secondary. The great forces of nature I have had to train and make subservient to my will. I am afraid that my life has been too strenuous, too void of anecdotal humor, to give it human interest."

OPENING THE MISSISSIPPI

In the early 'seventies, the whole country was astir with all sorts of gigantic railroad projects and river and harbor improvements. Most of the great Pacific railroads were either planned or in actual construction. The Illinois Central, linking the Lakes and the Gulf, and the Louisville and Nashville were about to meet at New Orleans, the natural distributing point of the Mississippi Valley. The Southern Pacific had started out of New Orleans on its long journey toward San Francisco. The Texas Pacific was projected. In time, the commerce of half the continent would be piled upon the wharves at New Orleans, waiting for ships.

But the sea-gate of New Orleans was locked. No vessel drawing more than nine feet of water could approach within a hundred miles of the city. The mouth of the Mississippi must at once be opened to deep navigation, and Congress realized it, but a great engineering problem must be solved before deep-draft vessels could come through.

Difference of opinion regarding the method of opening navigation at the mouth of this great river was so fierce that it threatened for a time to postpone all work. The fight appeared to be St. Louis against New Orleans, the new trans-continental railroad lines against the Mississippi River. It was in reality a fight of the military engineers of the Government against Mr. James B. Eads, the civil engineer who had dared to lift his voice against the plan of these engineers to open the Mississippi by canal. The press of the country took sides and for months the country rang with the "villainy" of Eads and the railroads, or the conspiracy against him.

The American engineer was at that time comparatively inexperienced in river and harbor construction. Eads was the one engineer in the country who had minutely studied the Mississippi from its sources to its mouth. He had surveyed much of the bottom, under a diving-bell. He had built the bridge at St. Louis, at that time one of the wonders of the world. He asked Congress to let him open the mouth of the Mississippi by building parallel lines of jetties in the great Southwest Pass. Congress replied by sending a commission of experts to study jetties in Europe. When this commission made its report, Congress rejected the plan of Eads. The engineer then said that he could build on the small South Pass, for $10,000,000, a line of jetties producing a depth of twenty-nine feet of water. Congress replied, in effect: "You can do so, but 'no cure no pay.' If you fail, our experts cannot blame us. If you succeed, remember we gave you the opportunity."

The little South Pass at that time drew only 10 per cent. of the Mississippi's water. It was like a funnel whose big end lay up the river and whose little end was almost closed by sand-bars that protruded into the Gulf. To open the South Pass to navigation, was not only to make water run up-hill but to make it cut its own way through the bar to the sea. To keep the channel open by the stream's own force when the other two big passes at hand were trying to swallow up the little pass, was a problem that this experienced engineer dreaded.

CORTHELL SELECTED BY EADS

Eads now most needed an assistant of genius, courage, and tenacity of purpose. His own fame, the capital of his friends, and the welfare of the Mississippi Valley would rest upon the shoulders of the engineer actually in charge of this work. Eads had watched with appreciation the accurate work of Corthell, one of his subordinates on the St. Louis bridge. He was the best executive engineer he had found. He said to Corthell:

"Congress gives me no money till I get ten feet of water. I want you to do this work, and you must do it not only as economically as possible but so fast at the outset that we may win the confidence of the public and get the money to carry it forward to pay-day from Congress. The Government has slighted me. I fear we can never build a permanent channel in this pass. The Government will see this when it is too late for me."

The Government did eventually realize that

the Southwest Pass should have been chosen. Four years ago, work was at last begun upon the Eads project of opening the Southwest Pass Channel, a work still under way. Mr. Corthell, under Eads's direction, constructed the South Pass Channel to the Gulf, opening it to steamers of twenty-nine feet draft, making New Orleans at that time the second seaport (in exports) in the United States. Mr. Corthell said that this work was one of the most difficult pieces of engineering ever undertaken. The river, more than a mile wide at the head of its passes, had to be carpeted with willow mattress from both banks, leaving only 800 feet open at the head of the South Pass.

Time after time, during five years, Corthell saw his work broken at some point by the force of the flood. There were points in the pass where the slightest change in the course of the water would upset weeks of work. In addition to the forces of the great river, Eads and Corthell had to contend against the reports of the Army Engineers sent by the Government to inspect the work. These same engineers who had tried to discredit Eads were determined to crush the enterprise. Major Powell, in the spring of 1877, reported to the Government that there were only twelve feet of water on the bar. Corthell claimed that there were fifteen feet. Captain Grager, of the steamship *Hudson*, from New York, entered the controversy by offering to navigate the channel. His challenge was accepted by the engineers and on May 12th the *Hudson* appeared at the mouth of the South Pass. It was a critical hour in the history of the enterprise. If the steamer should ground, not another dollar could Eads and Corthell have for carrying on the work. The commerce of the Mississippi Valley would be halted for ten years—possibly for twenty, for the canal would have been undertaken and would have failed. As the *Hudson* turned its nose into the pass and started up-stream, Mr. Corthell could hear his heart beat. When the steamer had ploughed its way safely through the pass and entered the deep water beyond, a great shout went up from the crowds on river and shore.

The undertaking brought its reward to the men who successfully fought the Mississippi and opened it to commerce. Engineers and governments watched the progress of the work and, when it was finished, the men who had triumphed against the difficulties were hailed as leaders of their profession. In 1876, the Emperor of Brazil, Dom Pedro, eager to open the waterways of his country, came to New Orleans to see the work of the American engineers. Dom Pedro had already projected a far-reaching policy of river and harbor development—and there it stopped. At New Orleans he outlined his plans to Mr. Corthell. The opening of the Rio Grande do Sul to ocean navigation was the end chiefly desired.

"It is only by jetties that a channel can be opened," said Mr. Corthell.

"But we have no engineers who can do such work as you outline," Dom Pedro replied.

The American engineer was too much occupied with problems in the United States to consider a proposition to go to Brazil, but he nevertheless made a mental reservation that "when Brazil is wholly ready to undertake the work, I may be ready to do it." And that is exactly what happened.

Captain Eads at this time had the project of the Tehuantepec ship-railway in mind. His success at the mouth of the Mississippi emboldened him to embark on one of those engineering ventures that still remain unrealized. His plan was to lift great steamers out of the Gulf, place them on cars, and transport them for a distance of eighty miles across the Isthmus of Tehuantepec, and launch them in the Pacific.

Mr. Corthell made the surveys for this project and to this day he believes that the inter-oceanic route should have been by ship-railways instead of by the Panama Canal. And time might have confirmed his opinion but for three events: Eads did not live long enough; the Mexican Government could not financially back him; and the United States was then content to watch De Lesseps waste French money at Panama.

MAKING TAMPICO A GREAT PORT

I asked Mr. Corthell what he considered his greatest single piece of engineering work.

"It lies beneath the waves of Tampico and is not visible to the eye."

The engineer is proud of this perilous piece of work. It was dramatic in execution from first to last. In its construction, it was a battle against the forces of the ocean.

The Mexican Central Railway Company, an American corporation, built a branch line of 400 miles to tide-water at Tampico without having first fully investigated the character of the port. The harbor was a graveyard in

which lay buried many vessels. Some of the best English and American engineers declared that a deep ship channel from the sea could not be constructed, and that the railroad would have to tear up its tracks.

At the instance of Mr. Levi C. Wade, the president of the railroad, Mr. Corthell went to Tampico, made his surveys, and submitted a plan to build two parallel lines of jetties down the river Panuco, cutting the bar and terminating in the deep sea. The engineer had to meet huge breakers, rolling in from the sea, piling up an impassable bar, and direct this force in digging a channel.

The problem at Tampico was one chiefly of time and speed. Once the jetty walls had been started, there could be no delay. Slow construction would only pile the bar higher and higher and the channel of river and sea would so shift its course that the work would be destroyed, and further work be made impossible. So the work from the outset was fast and furious. Railroads on piles were built out into the sea and huge sections of willow mattress dropped from the trestle into the waves. Carloads of rock were then dumped in on this mattress to hold it in place. The wind at times had a velocity of eighty miles an hour, filling the air with a blinding mass of water and causing it to cut away the unfinished walls of the jetties.

Mr. Corthell did not have great confidence in the permanency of his work at Tampico. The sea was so strong and the bar so shifting that he feared the jetties would in time be submerged. Instead, the channel has been dredging itself. At low-tide, the harbor and channel float vessels of twenty-eight feet draft. Tampico at once rose from a fifth-rate port to the first in Mexico, surpassing Vera Cruz in exports. It is to Mexico what New Orleans is to the Mississippi Valley.

A NEW PORT FOR BRAZIL

Early last summer, Mr. Corthell—at the age of sixty-seven—left New York for Brazil to work out the dream that Dom Pedro had raised in his mind at the mouth of the Mississippi in 1876. "My life is getting toward the end of hard work," the old engineer said to some of his friends, "but I am desirous of helping humanity; it is practically laying life on the sacrificial altar for five years more of severe labor in Brazil."

In some respects the task before him is the hardest of his life. It is the construction of $15,000,000 worth of harbor and channel work at Porto Allegre, in Rio Grande Do Sul, and at Para in the north. The latter port taps the great Amazon Valley.

Rio Grande do Sul is the one state of Brazil wholly within the temperate zone; it is called "the park of the Southern Continent." More than 600,000 Germans and Italians (from northern Italy) have settled there within the last twenty years. Germany has long looked with covetous eyes upon this region and Brazil has made extraordinary efforts to develop it and to nationalize it. But this state is still without an adequate seaport. The maximum depth on the bar at Porto Allegre is only twelve feet of water, and freight rates are well nigh prohibitive. The national government has wasted millions dredging the great lagoon and the north canal that connects the port with the sea, and has only within the last three years awakened to the fact that a most difficult engineering problem confronts it.

At certain seasons of the year the wind is from the land, blowing immense volumes of water, loaded with the sediment of the great lagoon, through the canal and across the bar. Because of the deposit upon this bar, the water becomes too shallow for the navigation of big steamers. At other seasons of the year the wind is from the sea, driving the water high upon the canal and lagoon, shifting the bar and making it treacherous. As every experienced hydraulic engineer knows, there is only one solution to a problem like this—and that is long, parallel jetties so constructed that the water will be forced to do its own dredging. The success of a jetty system seven miles in length and built much of the way through a raging sea, depends upon the skill of the engineer who constructs it; but Mr. Corthell promises a sea-channel across the bar and a harbor deep enough to navigate large vessels.

His enterprise has begun to boom all southern Brazil. Within the last two months American capital has launched a long-hoped-for railroad from Rio Janeiro to Rio Grande do Sul. Southern Brazil will soon be one of the strongest fortresses of the Monroe Doctrine in the Southern Continent. American engineering genius is sometimes as potent as American diplomacy.

THE MAN AND HIS IDEALS

In an old barn-like store-house on the high-road of the village of North Egremont, Mass.

Mr. Corthell has gradually collected one of the finest private engineering libraries in the world. It contains several thousand volumes on engineering and kindred subjects. At his death, this library will go to Brown University.

Mr. Corthell is a member of nearly every important engineering society in the United States, Mexico, Brazil, Argentina, and Great Britain. He also belongs to all the chief geographical and scientific associations in America and England. He has three times represented the United States at the International Congress of Navigation, and has been summoned a number of times as an expert before the River and Harbor Committees of Congress. He has never let slip an opportunity to impress on governments and engineers the great fact that trade hinges on the depths of the world's harbors and ship channels. Mr. Corthell has personally made a study of more than a hundred seaports in America and Europe. His information is not only encyclopædic, but it is suggestive and illuminating.

One point that he has emphasized again and again is that ship-builders have been compelled to increase the draft of their vessels faster than governments have increased the depths of ship channels and harbors; and now the ship-builders, having reached the limit in draft, have tried to meet the growing demand of commerce by adding to the length and beam of their ships. The result is broad-bottom, top-heavy vessels, hard to navigate, with heavy coal consumption and low speed. Mr. Corthell is of the opinion that a fraction of the money spent for extra fuel, for increase of big ships, for the loss of time in transit, and for the shipping of too small cargoes for legitimate trade profits would develop seaport facilities in advance of trade demands. He has rung the changes on this phase of the development of commerce. It is far more important to the business of the world, he thinks, that ship channels be adequately deepened than that the railroads be compelled to reduce their freight rates.

AMERICA'S LEAD IN RAILROAD ACCIDENTS

BY

EDWARD BUNNELL PHELPS

UNFORTUNATELY, railroad accidents constitute one of the many products — or by-products — of modern, high-pressure life, in which the United States leads practically all other countries. Of late years, more or less loose and rambling statements to this effect have been repeatedly made and published in all sorts of places. But, in so far as I am aware, the gruesome fact has never been scientifically demonstrated outside of certain technical journals, and has nowhere been so presented as to produce a lasting impression on the public mind. Until the actual situation has been sharply visualized before the American people, no effective protest against it can be expected, and it follows as a matter of course that no real abatement of our shameful lead in railroad accidents can be looked for in the interim. Having been convinced of these facts by several years' study of the subject and by conversations regarding it with many men of all classes, I have concluded that the first move for the reform of the present evil must take the form of a *demonstration* of our lamentable leadership, in such convincing, untechnical manner as to make that leadership apparent at a glance. Then will come the asking by a considerable number of Americans of that far-reaching question, "Why?"

I have reduced the results of a somewhat exhaustive investigation of the subject of railroad accidents in Europe and the United States to certain diagrams, which are herewith presented, and put the vital facts of the case in the simplest possible form. In order to eliminate technicalities so far as possible, the mass of tabulations on which the diagrams are based has been omitted, but all the figures involved in the diagrams may be relied upon as officially authentic. As the latest complete figures for

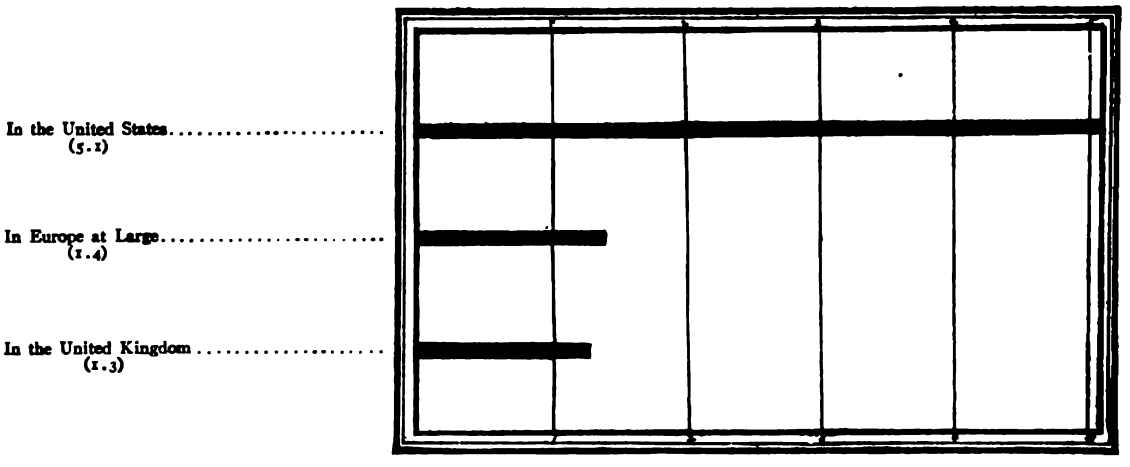


DIAGRAM A—NUMBER OF PASSENGERS KILLED BY RAILROAD ACCIDENTS IN 1903 FOR EACH 10,000,000 PASSENGERS CARRIED

railroad accidents in all European countries now available are those for the year 1903, the comparisons are made on that basis — the figures for the United States being those for the year ending June 30, 1903 — and the totals are as follows:

Countries	Total Mileage	Passengers Carried	Passengers		Total Casualties	
			Killed	Injured	Killed	Injured
United Kingdom	22,435	*1,195,265,105	156	3,413	1,242	18,557
All Europe	173,303	3,306,081,501	486	5,776	5,378	30,007
United States	207,977	694,891,535	355	8,231	9,840	76,553

*Not including season ticket-holders.

These figures show that, while all the railroads of Europe combined carried nearly five times as many passengers in 1903 as did those of the United States, the total number of passengers killed was only one-third larger: although the railroads of the United Kingdom carried about one and three-quarters times as many passengers as did ours, the fatal accidents to passengers numbered less than one-half as many as in the United States — despite the fact that the vastly greater passenger traffic of the United Kingdom was restricted to less than one-ninth of the mileage of American railroads, thereby of course greatly increasing the density of traffic and the resultant danger of accidents. Otherwise stated, the railroads of Europe carried 6,989,674 passengers for each one killed, and the railroads of the United Kingdom 7,661,956 for each one killed, whereas in the United States only 1,957,441 passengers were carried for each one killed. Recorded on the basis of number killed for each 10,000,000 carried, these figures make the comparative showing presented in Diagram A.

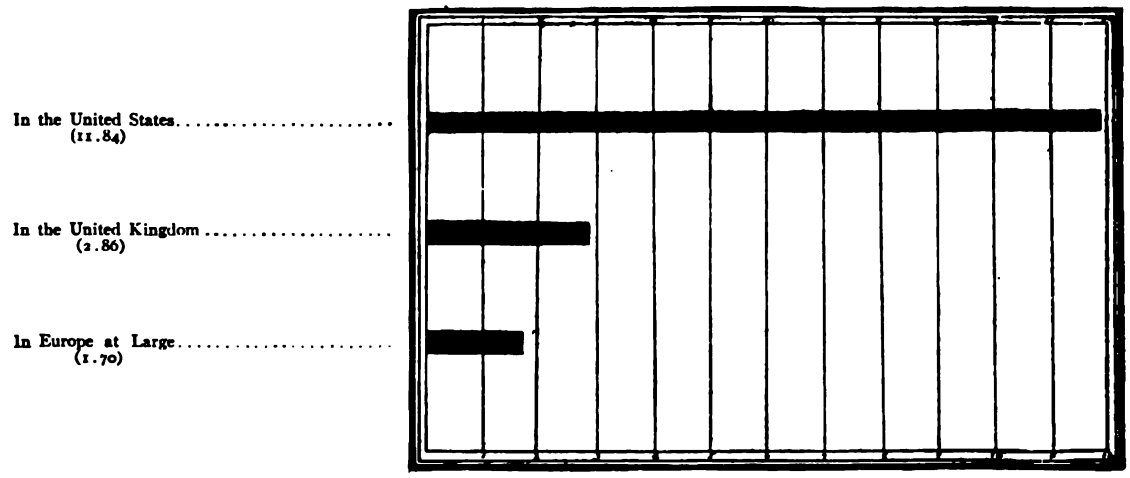


DIAGRAM B—NUMBER OF PASSENGERS INJURED IN RAILROAD ACCIDENTS IN 1903 FOR EACH 1,000,000 PASSENGERS CARRIED

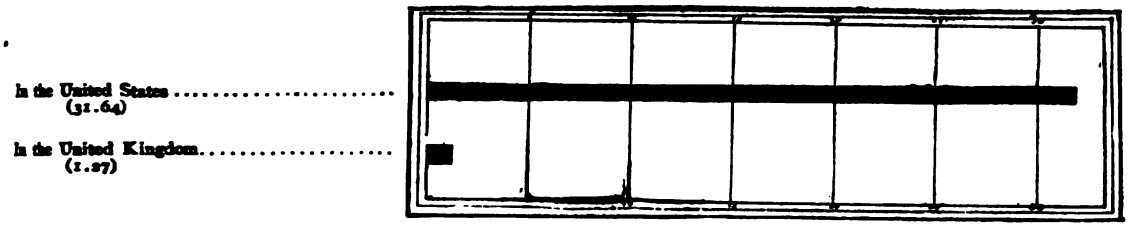


DIAGRAM C (a)—NUMBER OF PASSENGERS KILLED IN TRAIN ACCIDENTS ONLY IN 1901-5 FOR EACH 100,000,000 PASSENGERS CARRIED

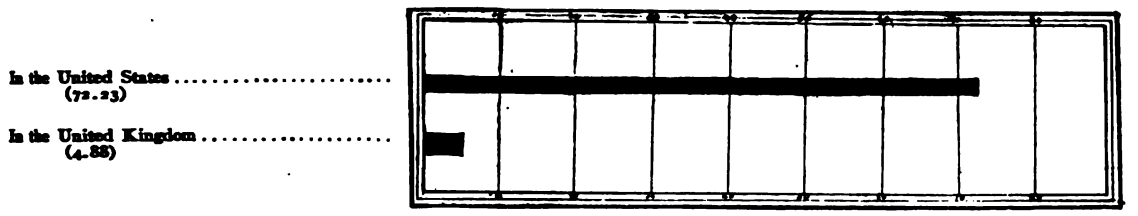


DIAGRAM C (b)—NUMBER OF PASSENGERS SO INJURED FOR EACH 10,000,000 CARRIED

In non-fatal accidents to passengers, the United States unquestionably leads both the United Kingdom and Europe at large, but the reports of such accidents probably are much more comprehensive in the case of the two great Anglo-Saxon countries than in that of most of the countries of Continental Europe. The figures for the United Kingdom and the United States may safely be compared, whereas the showing for all Europe must be taken with several very large grains of salt. With this reservation, it appears from the official reports that for each passenger injured there were actually carried 588,120 on all the railroads of Europe and 350,210 on the lines of the United Kingdom, as compared with only 84,424 passengers carried for each passenger injured on the railroads of the United States. This comparison is made in graphic form in Diagram B.

The figures for the number of passengers and employees killed and injured in train accidents—in other words, in collisions and derailments—are really much more reliable indices of the volume of railroad accidents than are the total figures for so-called "railway accidents" which are commonly cited, the latter figures including all injuries due to jumping or falling from trains, or incurred by "trespassers"—the latter in the case of the United States aggregating more than one-half of the total of fatal accidents reported by the Interstate Commerce Commission. By tabulating the reports of the Board

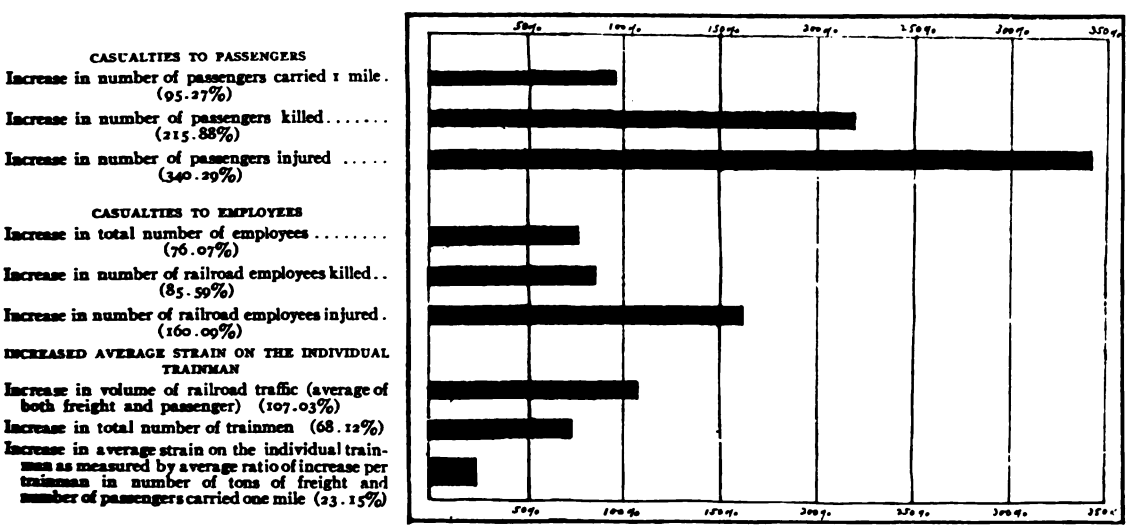


DIAGRAM D—THE INCREASE IN AMERICAN RAILROAD ACCIDENTS IN THE DECADE ENDING JUNE 30, 1905 AND THE PROBABLY CORRELATIVE INCREASE IN THE STRAIN ON THE INDIVIDUAL TRAINMAN

of Trade for the five years ending December 31, 1905, I find that of the 5,953,676,186 passengers then carried only 76 were killed, and only 2,907 injured, "from accidents to trains, rolling-stock, permanent way, etc.," in the United Kingdom, whereas a similar tabulation from the reports of the Interstate Commerce Commission shows that, in the United States, of 3,559,024,389 passengers carried in the five years ending June 30, 1906, 1,126 were killed and 25,705 injured in collisions and derailments only. In the case of railroad employees thus killed or injured, the showing of the United States is even worse, only 34 employees being killed and 638 injured in the United Kingdom, while 3,617 employees were killed and 26,334 injured in accidents of this character in the United States. In Diagram C, this startling leadership of the United States is otherwise told.

Investigation shows that the increase of accidents of late years has proportionately far exceeded the increase in density and volume of traffic. Tabulations of the figures of the Interstate Commerce Commission's reports for the ten years ending June 30, 1905, show that the average increase in volume and density of traffic — "density of traffic" being gauged by the number of passengers and tons of freight carried one mile per mile of line — in that decade was 82.96 per cent.; on the other hand, the average increase in the number of passengers and employees killed was 150.74 per cent., and the average increase in the case of passengers and employees injured, 250.19 per cent., despite the general, forced, adoption of automatic couplers and train brakes. The results in detail of these tabulations are presented in Diagram D.

THE INCREASED STRAIN ON TRAINMEN

In the last-named diagram, I have included one item from which railway officials will probably dissent — and sharply dissent — namely, the line showing the *apparent* increase in strain on the individual trainman. The calculation of the increased strain is, to a certain extent, theoretical, whereas all the other calculations recorded in Diagram D are purely mathematical, but it may fairly be regarded as an approximation of an important factor among those responsible for the startling increase in railroad accidents. Here, in a nutshell, are the official figures upon which the calculation is based, enginemen, firemen, conductors and all other trainmen being included under the heading of "number of trainmen."

Year Ending June 30	Total Number Trainmen	Passengers and Freight Carried One Mile			
		Passengers		Freight	
		Total Number	Number per Trainman	Total Tons	Tons per Trainman
1905	265,175	23,800,149,436	89,753	186,463,109,510	703,170
1895	157,731	12,188,446,271	77,274	85,227,515,891	540,335
Increase	107,444	11,611,703,165	12,479	101,235,593,619	162,835

By the simple process of division, it becomes apparent that the increase in the ratios of passengers and freight per trainman carried one mile in the decade 1895–1905 were respectively 16.15 per cent. and 30.14 per cent., thus making the average ratio of increase per trainman in the volume of passenger and freight traffic 23.15 per cent. To be sure, debatable discounts might be made on account of partially counterbalancing changes in equipment and operating methods in the decade in question, but the fact remains that there unquestionably was a material increase in the strain per trainman, and the above tabulation approximates that increased strain on the only basis by which it can be computed from the Interstate Commerce Commission's reports.

Mr. Lucius Tuttle, president of the Boston and Maine Railroad for fourteen years and one of the most experienced railroad men in this country, announced, about three years ago, his deliberate conclusion that the large number of recent railroad wrecks could only be accounted for on the theory that in some cases the brains of the men in charge of the ill-fated trains had momentarily failed to work. Why did the brains in question fail to work? Would not the increased strain per trainman partially account for the failure? It seems to me that this increased strain per trainman is a matter which has not yet received anything like the serious consideration which it deserves in the discussion of American railroad accidents.

Scores, if not hundreds, of "explanations" of the steadily increasing number of American accidents have been offered, and many attempts at analyzing the causes for the increase have been made, but nothing like a comprehensive and satisfactory diagnosis of the situation will be made until a painstaking investigation of the whole problem has been instituted and completed by the United States Government.

OUR DISREGARD OF HUMAN LIFE

In my opinion the basic cause of this country's appalling leadership — and steadily

ing leadership — in railroad accidents, e found in certain temperamental weak- of the American character. It is the thing in the world to charge the evil in irety up to the "soulless" railroad cor- ns. But, are not the corporations in n exclusively made up of Americans, n by Americans for Americans, thus ng the American character in every of their operations, from switchman to nt? Does the government of our great d corporations materially differ from the ment of other great commercial corpora- r the government of our cities and states, e nation at large? Every one of these ments keeps its ear close to the ground, quick to respond to the real demands of entele to which it looks for support. w, money is the first and foremost goal American people; personal safety and are matters of secondary consideration. ar as the railroad service of the country erned, the loudest demands of the public se for abundant passenger and freight s, and for the greatest possible speed; has been any real *demand* for increased in railroad management — and possibly ed speed, if necessary — it has not been expressed. In default of such demand, railroad companies be expected of their lition to introduce the block-signal sys- a wholesale basis, instal proper pro- at all grade crossings, substitute steel den cars, and take all the other costly hich would materially reduce the num- ailroad accidents?

HE INDIFFERENCE OF THE PUBLIC

matter of fact, the American people at ve shown practically no serious interest ubject. The reasons for this apathy are l: first and foremost is that singular the American character which has so een noted by foreign observers, namely, arent lack of power to maintain sus- interest. In the second place, mere have no attraction for the average man; ident figures so often cited from the te Commerce Commission's reports no definite, tangible meaning to most of the daily papers and magazines; iently very few Americans know that times as many people are killed and for each one carried on American rail- s in practically any other civilized coun- try. Hence, there has been no serious demand for an abatement of the evil, up to date.

Probably next in importance to these racial weaknesses of character, by way of causes for the steady increase in our railroad accidents, is the looseness of management of employees.

THE DISREGARD OF TRAIN ORDERS

An examination of the quarterly Accident Bulletins issued by the Interstate Commerce Commission shows that the vast majority of collisions and derailments are due to disobedience of train orders. This disobedience is either due to carelessness or is fostered by the engineer's knowledge that his daily duty is to bring his train in on time if he can possibly do so. Comparatively few serious railroad accidents are due to unpreventable causes; the great majority are due to some employee's mistake or deliberate defiance of the rules.

There is a variety of explanations of these shortcomings. My own opinion is that the railroad managements of the present day are primarily responsible, and the influences of "organized labor" secondarily responsible. The greater the demand for dividend earnings, the greater the demand for minimized operating expenses, and the less the attention paid to the enforcement of rules. When the stock-ticker is brought in one door of the railroad magnate's office, more or less of his interest in the detail of trainmen's work is bound to go out the other door. The trainmen recognize that fact, become disgruntled with their wages when they read that the company's president has made millions by a single deal — and some employees have been known to view with considerable complacency the smash-up of engines and cars committed to their care, so long as their responsibility for the accident could not be proven.

It is not the lack of the block-signal system on the vast majority of American lines; it is not any serious defect in track or train equipment; it is not the tremendous increase in the volume of traffic in recent years; it is not the constant pressure for increased speed at any cost — though increased speed of course means increased chance of accident; it is none of these individual causes which is primarily responsible for the alarming increase in railway accidents in this country. The primary cause, in the opinion of all men who have carefully studied the subject, is the recklessness of the American temperament, manifested alike by the railroad president and the railroad trainman.

BURR OAK AND SILVER MAPLE ABOUT THIRTY YEARS OLD, IN A PLANTED PARK

PLANTING TREES FOR PROFIT

WHAT THE NATIONAL GOVERNMENT, THE STATES, THE RAILROADS, AND PRIVATE INDIVIDUALS ARE DOING—SOME SPECIMEN YIELDS

BY

THOMAS E. WILL

SECRETARY OF THE AMERICAN FORESTRY ASSOCIATION

THE growing of trees, as the growing of corn or wheat, has a decided commercial value. The American people, with the example of the United States Forest Service, are slowly beginning to realize this. As in the experimental stage of most other industries, there have been many failures, but there have also been many successes.

In Pawnee County, Neb., a 16-year-old catalpa plantation gave a net return of $152.17 per acre at the time the plantation was cut. In Kansas, a 10-year-old catalpa plantation showed a net value of $197.55 per acre. Another, in Nebraska, when fourteen years old, gave a net income of $170.50 per acre.

Osage orange has produced 2,640 first-class posts and 2,272 second-class posts per acre. Red cedar in plantations twenty-five years old has attained a value of $200.54 per acre. European larch is worth from $200 to $300 per acre. White pine plantations forty years old have exceeded $300 per acre in value, and the eucalyptus is as profitable as the Osage orange.

WHAT THE NATIONAL GOVERNMENT DOES

In the work of forest-planting, the United States Forest Service has naturally taken the lead. Upon its advice, National Forests covering about 826,000 acres have been established in the sandhill regions of Nebraska and Kansas. Probably 60 per cent. of this area can be planted. To do this will require 600 million seedlings

COTTONWOOD TREES THIRTY YEARS OLD
Sixty feet high and eighteen inches in diameter

AN OSAGE ORANGE PLANTATION
This Kansas grove will furnish nearly 5,000 posts an acre

We know that reforestation of some of these areas has restored the rivers. We have here great treeless areas which can be successfully afforested and we do not know but that by this process we can *create* rivers."

The Forest Service not only plants trees on the National Forest area but it encourages and aids private individuals, companies, and communities to plant trees. As early as 1903, detailed working plans for forest tracts belonging to private owners in the South were prepared for 1,350,000 acres, and preliminary visits of inspection were made upon ten large forest tracts. In 1904, forty-two planting plans were

QUICK-GROWING LOMBARDY POPLAR AS A WINDBREAK FOR A COLORADO ORCHARD

for more than 2,800 acres. By the close t year, 334 planting plants had been made ıds in fifty-two states and territories.

WHAT SOME STATES ARE DOING

New Jersey, the State Forester has this ılanted 5,000 Michigan jack-pines on the River Reservation. He has 50,000 seed- n the state nurseries, and has started seed vill produce half a million young trees. as planted 50,000 young trees in the rk watershed, and 22,000 on the State imental Farm at New Brunswick. The ture of Maine has recently authorized and towns to procure for park purposes of land five rods or less in width beside

IRRIGATED ORANGE GROVE IN CALIFORNIA

ays and public waters. The lands may ndemned and must be paid for. The is to protect and perpetuate the beauties forests along the roads and rivers of the Connecticut is planting vigorously. In ring of 1906, 100,000 seedlings were set vate owners; the spring of 1907 saw this er increased to 350,000. The state now nursery in which it is raising half a million eady for planting next spring. The ıl Experiment Station of Colorado ished forty-nine experiments in tree ng in different parts of the state, employ- o,900 utility trees — black locust and

JACK-PINES WITH A BORDER OF BULL-PINES ON A NEBRASKA RESERVE

hardy catalpa. Nebraska last spring planted about 20,000 of the Norway poplar or "sudden sawlog."

The state of New York maintains three large nurseries for conifers in Franklin County and one for hardwoods in Ulster County, in the Catskills. The three Adirondack nurseries combined have a capacity of one million three-year-old "transplants" per year. In 1905 and 1906, fifty acres of pines and spruces were planted by the seed-spot method, with encouraging results. In 1906 the size of the state nurseries of Pennsylvania was doubled; they comprise six acres at Montalto and two acres in Huntingdon County. Last spring white pine seedlings to the number of 160,000 were set out. The significance of all this is large in dollars and cents. In Vermont, for example, there are 4 million acres of now unproductive waste lands capable of growing timber and

A PLANTATION OF GREEN ASH IN NORTHWESTERN KANSAS

A SECOND-GROWTH TURPENTINE FOREST IN GEORGIA

The turpentine is being extracted by the new cup-and-gutter system introduced by United States Forest Service

yielding an annual income of from $1 to $2 an acre. The State Forest Nursery at Burlington supplies plant material at cost and the trees require but little work after being set out.

In Ohio, a few years ago, the Experiment Station at Wooster took up the growing of timber as a farm crop. It distributed more than 100,000 seedlings, mostly catalpa, locust, and mulberry, among its coöperators. Very systematic work was done. During 1905 and 1906 it was continued, 251,275 trees being distributed in the last two years, making, for the three years, a grand total of 355,275. These trees are growing in 459 different tracts in the different counties of the state under the direction of 354 coöperators. Last spring Mr. Rane, the State Forester of Massachusetts, announced his readiness to distribute to a number of applicants 150 white pine and 150 white ash, two-year-old trees suitable for planting.

Yet there are still some states which practically tax their forests out of existence. Mr. Filibert Roth, State Forest Warden of Michigan, says that the present system of taxation, and the lack of proper protection, make it undesirable even to hold forest lands, not to speak of engaging in any reforestation. The Secretary of Agriculture, in his report for 1904 said, "Without fair assurance of safeguard against fire and of equitable taxation during the period required for a second crop to mature on cut-over lands, the private owner can make no headway." Happily the states, though slowly, are coming to see the point. Iowa, in 1906, provided for "forest reservations" in private ownership which were to be subject to restrictions in cutting and grazing and to be assessed at $1 an acre. The Pennsylvania legislature passed a law rebating for thirty-five years 95 per cent. of the taxes on woodland. This law is expected to apply to some 55,000 acres of neglected forest land which was taxed as high as other land and, because profitless, was abandoned. The new law enables the owner to reforest the land and to hold it as woodland while the new trees are growing. Connecticut, New Hampshire, Colorado, Indiana, Maine, Rhode Island, and Wisconsin also have enacted laws reducing taxation to encourage the growing of forests.

In some other countries privately owned forest lands are, in places, subject to Government control. We are slowly coming to this. The Iowa law above referred to is a step in this direction. Not more than one-fifth of the

A COMPRESSION TEST OF LONG-LEAF PINE
An example of the Forest Service's scientific methods

living trees in any reservation may lawfully be removed in any one year, and within one year after the death or removal of any tree the owner must plant and care for another. Grazing in forest reservations is forbidden, and violation of the act forfeits its benefits. Last year Hawaii had 300,000 acres of forest reserves, about half of which was Government land and the other half the property of private individuals. So great has the interest in forest preservation become that the sugar planters have not only allowed their own lands to go without compensation into forest reserves, but they have agreed with the Government to help reforest Government lands at private expense. Recently the Hawaiian reserves have been increased by 50,000 acres.

An increasing body of state legislation looks to the preservation of the forests. California, Indiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, New York, New Jersey, Pennsylvania, Washington, Wisconsin, and Hawaii have laws providing State Forestry Commissions or State Foresters. State Forest Reservations, or state lands with forests on them, are found in California, Connecticut,

A TORSION TEST MADE BY THE UNITED STATES FOREST SERVICE

AN EXAMPLE OF DESTRUCTIVE LUMBERING IN CALIFORNIA

Hawaii, Indiana, Kansas, Maryland, Massachusetts, Michigan, Minnesota, North Carolina, New York, New Jersey, Ohio, Pennsylvania, Tennessee, Utah, Washington, Wisconsin, and Wyoming.

The following table indicates the areas of the present state and territorial forests:

STATE FOREST RESERVES

State or Territory	*Area of State Forest in Acres*
Connecticut	1,360
Hawaii	300,000
Indiana	2,000
Maryland	3,500
Michigan	39,000
Minnesota	21,000
New Jersey	1,800
New York	1,439,988
Pennsylvania	820,000
Wisconsin	254,063
	2,882,711

Cities, too, are planting. In 1905, Helena, Mont., and Los Angeles, Cal., planted large parks in true forest style. The municipality of Denver distributed among its citizens last spring 20,000 trees as a gift. A similar distribution has since been made and 60 per cent. of the trees then given out are now reported as growing. Newark, N. J., is very active in planting shade trees. A commission has issued a diagram explaining graphically the requirements in regard to size of tree, manner of planting, and manner of protection. This is sent to property owners in front of whose premises trees are planted, and their coöperation is solicited. The city of Pittsburg suffered gigantic losses last spring from floods, attributed to the deforestation of the Allegheny and Monongahela watersheds. The city is now reported to be contemplating reforestation of these watersheds. The number of trees requisite for this work is estimated at two billions.

Corporations also are becoming vitally interested in forestry. Chief among these are certain large railroads. The annual wood consumption of such companies, for ties, structural timbers, bridge timbers, and the like, is vast. They are learning that it is better to produce such timbers for themselves than to rely upon a fluctuating and rapidly rising market. Many railroads own large areas of land. A considerable portion of such land is more suitable for forests than for agriculture. Besides, raising ties or other timbers for their own uses is more in line with sound railroad policy than raising grains and vegetables for the market; and renting lands for others to farm is not wholly satisfactory.

In 1905 the Department of Agriculture reported the establishment of private forest plantations on a vastly larger scale than hitherto. A fifteen-hundred-acre tract in Wayne County, Pa., was being reforested. In the Adirondacks, a railroad company has established a large forest nursery and begun planting the blank places under a plan for the conservative management of 26,000 acres. One railroad company had planted over 1,000 acres of trees in central Pennsylvania, while other roads had planted large areas in Kentucky, Illinois, Kansas, and Louisiana. Two companies owning land in western Pennsylvania from which coal had been mined were undertaking to reforest large areas. In eastern Pennsylvania a large enterprise was undertaking the reforestation of an important watershed in order to improve its water-conserving power and secure a revenue from land then unproductive.

The Pennsylvania Railroad planted many locusts, with such results that it finally became disgusted. The company then asked the Forest Service to lay out a forest policy for it. This was done; the railroad thereupon called to its service, as forester, the Chief of the Office of Extension in the Forest Service, to supervise the care and planting of the forest lands of the company. Already half a million trees have been planted, and 681 acres of land near Altoona, Pa., will be stocked with chestnut and white oak in the next two years.

The Santa Fé Railway has been experimenting largely in the planting of eucalyptus. These trees can be grown in California and make good ties. The railroad has sent its timber manager to Australia, the home of the eucalyptus, to investigate trees of this class in their native habitat. The road has purchased 8,330 acres of land near San Diego, Cal., on which to grow timber for its own use; a tract of 2,600 acres will be planted to eucalyptus.

The Lehigh Coal and Navigation Company will plant 378 acres in Carbon and Schuylkill Counties, Pennsylvania. The Delaware and Hudson Company, as a result of coöperative studies with the Forest Service, has appointed a forester to look after its extensive woodlands and attend to its planting work. The Cleveland Cliffs Iron Company of Michigan has established two nurseries on which pine trees are being successfully raised from seed to reforest the pine barrens of upper Michigan. On the cut-over land near Coalwood, Alger County, 90,000 are being set out.

Other agencies are pushing the planting work. The Panhandle Forestry Association, of northwest Texas, an organization of 600 members formed to encourage systematic tree planting, reported in 1905 that there were 200,000 trees already planted in the arid and naturally treeless region in which it operates. The Tri-Counties Reforestation Committee, representing the counties of San Bernardino, Riverside, and Orange, in California, is aiding in the work of afforesting all denuded or insufficiently timbered areas in the San Bernardino National Forest, the object being the conservation of precipitation. Arbor Day is a growing factor. The President proclaims it in an instructive, inspiring message. A dozen or more states issue Arbor Day annuals, some of which, through their descriptions and illustrations of native trees and information concerning planting, protection, and use constitute instructive reports on forestry. For seven years, one county superintendent of schools in Illinois has carried on an educational campaign through the schools to educate school and home to a greater appreciation of trees. Such work brings practical results. The tendency is to emphasize the practical rather than the purely sentimental side of Arbor Day observance, and to plant more trees instead of confining the exercises chiefly to songs and recitations.

FOREST-PLANTING BY INDIVIDUALS

Finally, individuals are planting. In Kansas and Nebraska large groves of the quick-growing cottonwoods have been successfully raised. Green ash, black walnut, honey locust, Osage orange, white willow, box-elder, Russian mulberry, white elm, Lombardy poplar, black

locust, silver maple, white pine, and other trees are being planted on the plains. Notable results have attended the culture of the hardy catalpa. Foremost among the successful plantations of this species may be mentioned those of Mr. George M. Munger of Eureka, Kan., and of Mr. L. W. Yaggy, near Hutchinson, Kan. So successful is the jack pine as a drought resister that one nursery sold 600,000 seedlings of this species to the farmers of Nebraska this year. A lumberman, after listening to a lecture on forestry, decided to reforest 6,000 acres of land under instructions from the Forest Service. An Iowa tree-planter, removing to South Dakota, obtained advice from the Forest Service regarding tree-planting, distributed Forest Service circulars, and himself planted trees which people came from distances of twenty-five miles to see.

And thus the work proceeds. We are still consuming three or four times as much wood as we are raising. Nevertheless, the forces that make for conservation and renewal are at work. The Forest Service, forestry associations, the General Federation of Women's Clubs, and the press are sowing the seed from which, in due time, may be expected a harvest.

THE FIGHT FOR A LAND CONSCIENCE

THE ADMINISTRATION'S CAMPAIGN AGAINST TIMBER-FRAUDS AND DISHONEST CATTLEMEN, WHO HAVE DRIVEN OUT HONEST SETTLERS

BY

ARTHUR W. PAGE

IT IS a fierce struggle that is going on in the Far West and in Washington (D. C.) over the public lands, and on both sides there are good hard fighters.

The warfare is now carried on by speeches, indictments, and political chicanery, but it has in the past probably caused more bloodshed than the Spanish War. The prize is worth fighting for — more than 900,000,000 acres of land — grazing land, desert, forests, mineral land (with gold, silver, copper, and other ores), and rivers and streams of vast power; and there is a bigger stake than that, for it is a fight to establish a land conscience. The West lacked a land conscience until the rude awakening of the last few years; and the East has thought little of its responsibility, for the public domain belongs to all the people alike. Government land in Colorado belongs as much to the people of Mississippi as to those of Colorado.

The land laws of the United States were framed with reference to the small settler, the "homesteader." They bear the mark of that most beneficent purpose, the granting of land practically free to the real settler — the man who went and tilled it and made his home and reared his family there. It was this homestead law that caused the settlement of the great Middle Western States more rapidly than any equal area was ever peopled in the world — its settlement, too, by perhaps the highest average of thrift and intelligence and character that ever went to a new country.

But admirable as the homestead laws were for the settlement of the agricultural land of the Middle West, they were not good laws for the settlement of the grazing and timber land farther West. It is, therefore, only fair to remember that the laws themselves to a degree provoked the condition from which we are now suffering. Laws that were made for Nebraska, if enforced in Oregon, would hinder legitimate industry. But Oregon and these other Western States were very far from the National Capitol and, if serious efforts were ever made to amend these land-laws, they were unavailing; instead of getting laws adapted to the country, men found it easier to disregard them — to set up a sort of code of their own. Where there were in effect no land laws, there was no land conscience. The result was that the man capable of taking large holdings got what he wanted; and the Far West became a country of conscienceless land-monopolists.

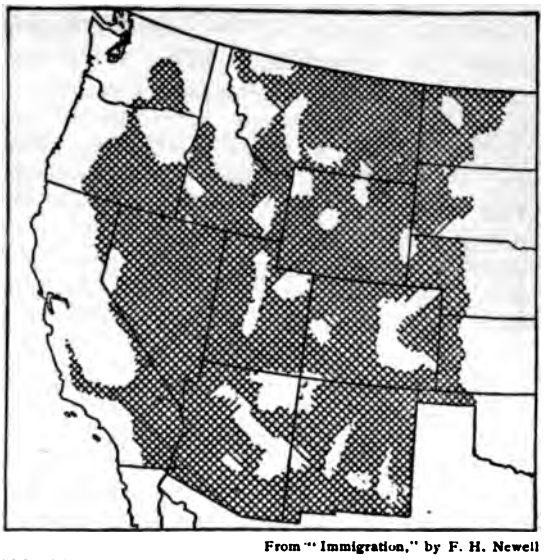
A TYPICAL CATTLEMAN'S CAREER

Take the case of a cattleman whom I shall call Walter Hoge. In the early 'eighties he

had a small "bunch" of cattle which he ranged anywhere he pleased between Canada and Mexico, on government ranges. In the hard winters he lost hundreds of them. Still he made money, for he bought neither land nor feed. He lived the life of a cattleman, which was just one degree higher than the life of his predecessor, the nomadic Indian who followed the buffalo herds. After a successful period he imported better stock, and then cattle "rustlers" stole his valuable calves. He and his cow-punchers followed them across a sage-brush plain for two days, caught them in a gulch among the foothills, and shot three of them. That was his first act of violence. A little later one of his men driving cattle into the Snake River country in Idaho was told that this range was occupied and that strangers from the south were not welcome. It was government land, equally free to everyone, but the Government did not enforce this. The range had now become so overstocked that there was not enough for everyone's cattle. The inevitable result followed, the survival of the strongest — that is, the strongest in a fight. Sometimes a battle or two were required to determine who was the strongest.

Then sheep were brought to these grazing lands. After they passed through a district, there was nothing left for cattle. The two kinds of grazing could not go on together. War broke out afresh, and that war between the cattlemen and the sheepmen is not yet ended. I visited three communities in which sheep herders had been killed or their flocks destroyed, and I heard of one place in which it was the cattlemen who lost.

Hoge's winter range had been invaded several times and in one case so cropped by others' cattle that he had lost many of his own by starvation. Then he remembered that his range was watered by a stream, two water-holes, and a spring, and he fenced the stream for twenty miles, "homesteaded" the spring, and had two of his cow-punchers homestead the water-holes and turn them over to him. Thus he acquired 600 square miles on which no creature could live without his permission, for he controlled all the water. If he had not taken possession some one else would have done so, and he would have been driven out. He had saved himself in a way which was commonly used and which was accepted in his community as perfectly proper. Yet he had broken the law twice. He had had the

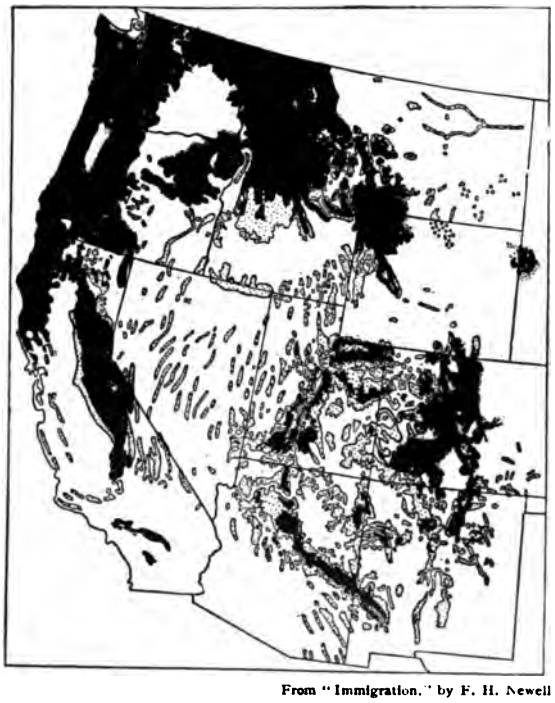


From "Immigration," by F. H. Newell

APPROXIMATE AREA OF GRAZING LAND IN THE WEST

Most of this is government land

cow-punchers homestead the water-holes for him, although they had to make affidavits that their applications were "honestly and in good faith made for the purpose of actual settlement and cultivation, and not for the benefit of any other person, persons, or



From "Immigration," by F. H. Newell

THE TIMBER AREA OF THE WEST

The portions in solid black show land where the timber is thick enough for commercial cutting

corporation." He had also illegally fenced in government land along the stream.

REAL SETTLERS DRIVEN OUT

The next chapter in this series of events was the settlement by a real homesteader on a tract inside Hoge's illegal fence. Hoge's cowpunchers tried to run him off by force. That was the customary way, and thus many a man has tried to accept the offer of a free home from the Government and found himself at the muzzle of a gun. A notorious case was that of a man named Horne in Wyoming, who killed three settlers, the last a half-grown boy, because they were persistent in holding to their claims. Sometimes, of course, the burning of a settler's house or the "losing" of his stock was the more convenient method to get rid of him. Hoge might have left his intruding homesteader alone if the newcomer had not sold alfalfa, irrigated by water from Hoge's stream, to a rival cattleman. That was too much. He saw that his rival was really getting his land from him by "dummy" settlers, and he went to see a land lawyer.

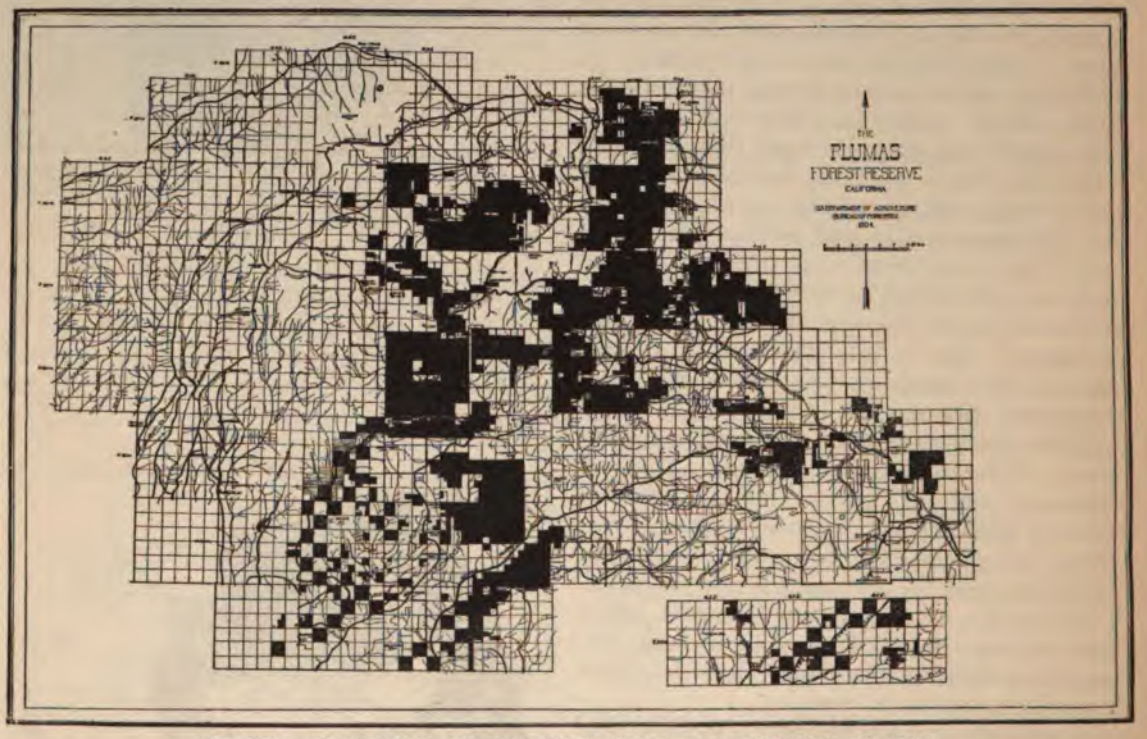
"How can I keep the land along the X Creek"? he asked.

"Homestead, desert claim, scrip, 'most any way," was the answer.

"Yes, but how about the law, and the affidavits?"

"Well, I'll tell you," said the lawyer. "Those laws were passed for the East — Kansas, Nebraska, and such places. They don't fit out here. But the Government wants to get rid of the land. Don't you suppose the local land-office knows its business? Other men have found that the land-office knows a thing or two."

Hoge got the land — in half-a-dozen ways — all illegal.



TIMBER GRABBING UNDER THE GUISE OF MINING CLAIMS

The law allows a man to file any number of mining claims. In 1904, H. H. Yard filed on 265,000 acres in the Plumas Forest Reserve, California, covered with valuable timber. There are no important mining operations in all this vast tract

DISHONEST "COMMONWEALTH BUILDERS"

There are thousands of Hoges — men whose "personal" honor is above reproach; men of fair dealing in other transactions, but who have defrauded the Government of land without incurring the censure of their fellows. Thus the West was settled without a land conscience.

And the country of course suffered economi-

cally as well as morally from such a system. Hoge, with fifteen or twenty thousand acres, may be hailed as one of the builders of a commonwealth. He merely took what was necessary for the development of his business, according to his ability. But the system under which he took a moderate amount of land allowed others to take and hold more — so much as seriously to retard the settlement of the country.

A California state official told me that Henry Miller, one of the great "land-kings," could drive his cattle from the Siskiyous (the mountains between Oregon and California) to San Diego and stop them every night on his own land. From the Siskiyous to San Diego is about as far as it is from New York to Savannah, Ga. Such a vast holding was secured under laws that were intended to populate the country with small farmers, each man tilling his 160 acres of free land.

FRAUDS IN TIMBER-LANDS

Again, in many parts of the West, lumbering is the most important industry. Timber lands must be obtained from the Government (except alternate sections within the railroad and wagon road grants, and school lands) under an act passed in 1878, which reads in part as follows:

> "The quantity of land which may lawfully be acquired under said acts by any one person or association is limited to not exceeding 160 acres," and the applicant swears that he "does not apply to purchase the same on speculation, but in good faith to appropriate it to his own exclusive use and benefit, and that he has not, directly or indirectly, made any agreement or contract, in any way or manner, with any person or persons whomsoever, by which the title he may acquire from the Government of the United States shall inure in whole or in part to the benefit of any person except himself."

Since 160 acres is too small a tract to support a mill, it was presumably intended that the settler should fell the tree and cut it up himself. But in the West the lumber business is conducted on a larger scale than anywhere else. The mills are equipped with the most improved machinery. Many of them can cut as much as 200,000 feet a day.

The lumber companies needed to own great bodies of timber. One man, T. B. Walker, has acquired more than a million acres in California. Mr. Weyerhaeuser, the timber-king of the Northwest, controls a great deal more than this. And these tremendous holdings were acquired under laws intended only to benefit the homesteader.

The companies obtained land by purchase from the railroads, the state school lands, and land to which "lumber jacks," "squatters," and settlers had honestly obtained title. Other tracts were obtained by dishonestly hiring "dummies" to take it and turn it over to the companies. As with the grazing lands, so with much of the timber land — it passed from the Government to private individuals with but little regard for the law.

THE FRAUD THAT LED TO INVESTIGATION

In 1897 Congress passed the Lieu-Land Act, which provided that anyone with a claim to land who relinquished it to the Government for a forest reserve might select an equal area of government land elsewhere. A firm composed of F. C. Hyde and John F. Benson, in San Francisco, made a business of acquiring valueless land, bribing the agents of the Government to include them in a forest reserve, and then exchanging it for good timber elsewhere. Then they ceased even to hire "dummies." They filled out the applications with fictitious names. They worked in California and in Oregon, and many others followed their example. Glaciers, mountain peaks, and cut-over lands were acquired and exchanged for well-timbered townships. Even if the land were reserved before any claim was filed, it was not entirely safe, as the accompanying map will show.

While these schemes were worked out, one of the Land-Office agents who was "in" with Benson and Hyde became dissatisfied and reported the frauds. By a happy chance, that report was the particular occasion for the beginning of prosecutions. Senator Mitchell, of Oregon, was convicted; Binger Hermann, the Commissioner of the General Land Office, was dismissed and indicted. Benson is in jail.

Besides that of Mitchell, 32 other convictions were secured in Oregon. In all the West during the last fiscal year, there were 293 indictments for land frauds, 138 convictions, and 79 acquittals. "Land Thieves," "Grafters," "Timber Barons" are common headlines in the Western papers, and great vilification is going on. But even this the beneficiaries of the old system take stoically. They are good fighters, winning or losing. They know that "reform" spasms come peri-

odically and they make everything snug to weather the storm. But a new and more serious danger confronts them. Certain officers of the Interior and Agricultural Departments are trying to change the land policy of the United States so that the old system can not be started again, even after the spasm of prosecutions are over. Behind these men and their work is the President, so that they can not easily be disposed of; nor could that be done without his aid, as indispensable as it is, for they are good fighters, too.

THE FIGHTERS FOR THE PEOPLE

The policies of the Administration are:

(1) To protect the forests in National Reserves.

(2) To reclaim the desert by building irrigation works.

(3) To settle the vexed range question by leasing the public grazing land under Federal supervision.

(4) To save the coal supply on government lands from monopoly and waste by keeping it under government ownership and by developing it under a leasing system.

"In all four movements," the President said in a speech at the Jamestown Fair last spring, "my chief advisor, and the man first to suggest to me the courses which have actually proved so beneficial, was Mr. Gifford Pinchot, the chief of the National Forest Service." During a recess in the Denver Land Convention last summer, I heard one of the delegates who opposed these policies say: "What we want is to get that damned man Pinchot." For the enemies of these policies recognize him as their chief enemy. Mr. Pinchot shows little trace of desk work. He is physically "fit," a man who enjoys camping, riding mountain trails, or hunting big game. He has spent much of his life in the open. Yet he is credited with having the best organized bureau in Washington. Some of his opponents in the West made the mistake of misjudging him. Some tried to find out "what he got out of it," and others looked for a theory-ridden desk man. All were disappointed.

Another man whose experience and knowledge serve the Administration's policy is Mr. F. H. Newell, the Director of the Reclamation Service. For many years, while in the Geological Survey, he studied the water supplies in the West and planned for the great works that he is now carrying on. From Dr. J. A. Holmes, of the Geological Survey also, the President has received much information about the coal deposits. This group of reformers of the West includes also other men in the Interior and Agricultural Departments whose extensive and careful investigations are of great value now in this practical contest to save and to reclaim the land for the people. No similar movement has ever had, perhaps, as large a volume of exact knowledge of natural conditions and of scientific facts; and the problems that are being solved touch the lives of half the people west of Kansas — both those who now live there and those who will go there. Moreover, since the public domain belongs to every citizen of the United States, and its resources are so important, its management will affect the whole wealth of the country. The supply of lumber, coal (for the West), beef, mutton, and wool comes from this vast territory.

CATTLEMEN VERSUS THE ADMINISTRATION

The first two policies on the programme, embracing the work of the Forest and Reclamation Services, are accepted by the public opinion of the West. But Congress has refused to pass the Burkett Bill to put the public range under the lease system. This bill provides that owners of cattle and sheep shall pay grazing fees; it permits the fences that are necessary but which until recently could be built only illegally; and it would end the range wars. By its provisions, the grazing land of the public domain would be under the same system now in use in the National Forests. Of course, the few men who were benefited particularly by the laxness of the old system wish no change; for in the new deal they would not be sure of the trumps they have hitherto held. They have fought and are prepared to fight still. In 1906 some of the Colorado cattlemen held a meeting at Glenwood Springs, at which they attacked the grazing restrictions within the National Forests. They could not persuade Mr. Pinchot, who was present, to change the regulations. They, therefore, sent a delegation to see the President. Mr. Roosevelt called Mr. Pinchot into his conference with them and they had their journey for their pains.

DENVER'S PACKED LAND CONVENTION

Still they refused to accept defeat. The Governor of Colorado was prevailed upon to call a convention of delegates from all the public land states to discuss the land question.

The purpose was to pass resolutions condemning the Administration, so as to make it appear to the East that the West as a unit was opposed to the Administration's policies. From fair representatives from the public land states, however, they could hardly hope for such resolutions as they wished. Therefore they packed the convention with their friends from Colorado and Wyoming. There were 386 delegates from Colorado, 145 from Wyoming, and 134 from all the rest of the states. But the plan failed. The Department officials, with a vigorous letter from the President, made many friends; Senators Warren of Wyoming and Smoot of Utah declared on the floor that the convention was not representative and that it was "rigged" against the Government. The resolutions were less hostile than had been expected. Yet they condemned any change in the "laws and *customs*" as to grazing livestock on the public range. The convention voted to retain the old régime, in spite of the fact that some months earlier the American National Live Stock Association had passed resolutions approving the Administration's plan to lease the grazing lands. In May this association sent a circular to 934 of its members who used the public grazing lands. Of these, 641 cattlemen and 116 sheepmen favored the government grazing policy. Even from Colorado the replies favoring the Government's policies were 190 and those opposed only 78. This convention also put itself on record against leasing the coal lands.

COAL-LAND FRAUDS UNCOVERED

Several interesting things concerning the Government's coal lands happened at the convention. First, there was Senator C. D. Clark, of Wyoming, in opposition to the Administration. The non-mineral affidavits by which the Union Pacific obtained the big block of coal land that it thought wise to return to the Government were in his brother's handwriting. Senator Teller was very much exercised over the President's withdrawal of the coal lands from entry. "The frauds which have been perpetrated," he said, "are practically inconsequential when we consider the great good done in the proper settling of the land." The next week a grand jury in Denver indicted some of the most prominent citizens for defrauding the Government of more than 20,000 acres of coal land. Since the coal land law was passed, in 1878, 24,683,290 acres have been patented or sought to be patented. Less than 500,000 of these have been acquired under the coal land law. The rest has been taken without regard to law. In the words of the Commissioner of the Land Office, "I think all will concede that the present statute does not permit sufficient acreage to be taken either by an individual or an association to warrant the making of a reasonable expenditure in developing a mine, and the only practical results in coal mining that can be worked out under the law is by evading the law."

As in the case of the timber land, a stringent law unenforced has put coal mining into a few great holdings and these are controlled by the railroads. The cases prepared in Denver by District-Attorney Burch and his assistant, Mr. Knaebel, when tried will show the public the details of another system of trickery as perfect, if not quite so extensive, as the system of land frauds which Mr. Heney has uncovered in Oregon.

THE COMING FIGHT IN CONGRESS

But the fight is not ended. The next battlefield will be the National Capital. This winter will find Senator Fulton of Oregon, Senator Carter of Montana (perhaps the shrewdest of all the opponents of the Administration), Senators Teller of Colorado, and C. D. Clark of Wyoming, Representatives Mondell of Wyoming, Bonynge of Colorado, and Binger Hermann, the discredited Land Commissioner from Oregon, and others in the opposition. They know the conditions, some of them better than anybody else, yet they have in the past voted and they will again vote against any legislation to relieve those conditions or even adequately to enforce the old laws.

On the other side, standing for the wishes of a great majority of the Western people, are many Western Senators and Representatives — Senator Newlands of Nevada, for example — who will join their knowledge and experience to that of the men in the Departments in an effort to solve the public land problem right, once for all, to establish a land conscience in the West, to give the *bona fide* settler every opportunity on the public domain, and to save the natural resources of the country for legitimate uses.

In this article I have tried to explain the situation as it now is and how it came about. In the next article, I shall try to show what the Reclamation Service has accomplished and is accomplishing.

SOLVING A GREAT CITY'S TRANSPORTATION PROBLEM

NEW YORK'S MILLION-DOLLAR-A-YEAR ATTEMPT TO REGULATE ITS STREET RAILWAYS BY THE PUBLIC UTILITIES COMMISSION

TO SEE the traction problem of New York City in full working order, one should go to Brooklyn Bridge. That is the storm centre, the place where the transportation woes of Brooklyn meet and mingle with the transportation woes of Manhattan. A hundred steady streams of traffic pour all day into the tiny square beneath the sheds that mark the western end of the great bridge.

Here, from the Subway, like ants from their black caves, tumble the thousands from Upper New York, from away out in Westchester, from the borders of Connecticut, from the half-hundred little cities that cluster along the northern fringes of the metropolis.

Here, too, the big surface lines from the crowded East Side bring their daily freight — the Third Avenue line, the Fourth and Madison lines — carrying the crowds southward in the morning, reaching out to carry them northward at night. Here, to this little packed plaza, come all the hordes of Brooklyn, gathered from a sweep of twenty miles, from the shores of Rockaway to the pleasant bays of Huntington. Within the sweep of the great arms of the Brooklyn Rapid Transit dwell hundreds of thousands of men and women who daily cross the bridge to work, and daily recross it to seek their homes.

Two huge elevated systems converge on this same point, the traffic of the Third Avenue and the Second Avenue lines of Manhattan mingling with the thousands who travel on the long, straggling, twisting courses of the Brooklyn Elevated, tapping all the heaviest areas of urban traffic within the city of homes beyond the bridge. Daily this traffic grows. Each week the crush is heavier than it was in the same week a year ago, and the dread of the crossing increases as the traffic swells.

Over the heads of the swarming thousands as they go sits the Public Service Commission, this new weapon that Governor Hughes and the people have forged to cut the knot that has defied undoing. You may go, any day, and watch the problem from the windows of the office of the Commission, away up in the towering Tribune Building, on Park Row, right on this plaza of discontent. Every one of the Commissioners may sit at his working desk and watch the wheels go round. He may time the pitiful surface cars as they creep across the gray ribbon that is the bridge. He may see the hundreds of people clinging desperately on the footboards as the cars crawl away from beneath his feet. He may note the black crowds on the platforms of the elevated trains, streaming out from the sheds of Manhattan, across to the sheds of the Brooklyn end.

Some of the Commissioners can see much more. A few are favored with a glimpse of the plaza as it fills in the morning, when the tide sets west and south, rather than east and north. They may watch the people as they swarm from the subways, from the elevated, from the dozens of loops on the bridge, out into City Hall Park, away to the west along Park Row, down the dark gully of Nassau Street. And that is the heart of the traction problem that these men have come here to solve. To-day the little circumscribed lower end of Manhattan is jammed. We pile our offices far above the clouds, we dig their foundations down into the depths of the earth — and all that more men may live and breathe below Park Row. And every night and every morning our added thousands must squeeze through the same narrow funnels that last year served to carry the lesser flood, and barely served, at that.

Let that epitomize the traffic problem. Of course, it is a thousand times complicated by the ramifications of high finance, low politics, and corporation trickery. It is not proposed to dwell upon the manifest financial sins of the Metropolitan Street Railway, the Brooklyn Rapid Transit, the Interborough-Metropolitan. These things are incidental to the traffic problem, however important and interesting they may be in themselves. The Commission has the right to take them in hand. It has done

so already, but only as a means to an end. That end is the bettering of the traffic conditions.

THE FINANCIAL MASTERS OF TRAFFIC

So far as Manhattan is concerned, it is enough to note that everything — subway, elevated, surface lines — is controlled by a modern monster of the "holding company" breed, known as the Interborough-Metropolitan Company. It was organized in January, 1906, under a 1,000-year charter. Since it controls everything, the men who control it might be thought to control everything; but high finance is not so simple. When they made it, they provided that the preferred stock should not vote, so long as it paid dividends. Then they went one step farther. They made a committee of five men, who should have the right to vote all the common stock for five years, whether they owned it or not. The five men were Messrs. August Belmont, Thomas F. Ryan, P. A. B. Widener, W. G. Oakman, and Cornelius Vanderbilt. That is the Traction Trust in a nut-shell.

Now, none of these people know anything about running a street railway; so they hired Mr. T. P. Shonts to do the work, and set the business going with their combined blessings. To be sure, the enterprise was somewhat waterlogged, but it did float.

Then, the unexpected came about. Up at Albany, they made a bill to create this double-barrelled Public Service Commission. One barrel was loaded to bring this traction trust, the Brooklyn company of the same nature, and a few other semi-public corporations of New York City into the bag. The other was charged to preserve a few of the traditions of regulation over the traction companies, railroads, gas companies, and other corporations doing business in the state outside of New York City.

The Commissions took office on July 1, 1907. The one that assumed control over the traction and other public companies of New York City is the main object of interest in the present contingency. It was a "live" commission. The traction companies thought they knew how to deal with it, having had some experience with the old Rapid Transit Commission. They discovered the difference later.

THE COMMISSION'S PROMPT WORK

This commission was ambitious. It had no traction experts on it. It plunged therefore immediately into the traction muddle. Within six weeks after its inauguration, it was deep in what has been euphemistically called an "investigation" of the Interborough-Metropolitan Company. The Commission sought knowledge. It found it, if a scandal long dead and buried may be called knowledge. The search, of course, uncovered iniquity after iniquity. Much of it was matter of court record twenty, fifteen, ten, or five years ago. So far as a close perusal of the evidence can be taken to indicate, none of it is new. The honor of two dead men was called in question. That, too, was done long ago. The methods of bookkeeping in the surface-line companies were exposed. That also was an old, old story down in Wall Street.

The natural result came to pass. The stocks and bonds and notes of all the companies involved fell sharply on the Wall Street markets. The credit of the whole business disappeared. At the same time that this end was accomplished, the Commission set about ordering a huge increase of equipment on the lines, involving the expenditure of many millions of dollars. Of course, the bankruptcy of the weaker companies followed. The surface lines would have been bankrupt last winter had it not been for the willingness of the other companies in the brotherhood to lend them money. Now even the stronger companies have lost their credit, and would not be willing, in any event, to loan further to the surface lines. Hence the receiverships of September 24th.

It is not proposed to judge the Commission by the immediate results of its activity. Perhaps the process used is the right one; perhaps it is not. Mr. Willcox, the chairman of the Commission, thinks it is. Mr. Shonts, the president of the Interborough-Metropolitan, thinks it is not. Both are interested parties. The thousands of stockholders and bondholders of the traction lines are cursing the Commission. The millions of people who travel on the lines don't know yet whether to curse or to bless. They are in the habit of cursing, and the habit will continue until some tangible results come from the Commission.

A COMMISSION OF PUBLIC-SPIRITED MEN

Let us turn from the financial questions involved and study the Commission itself, its personnel, its aims, its powers, its ambitions, its problems. At the outset, it does not strike the average observer very hard. The American

public is accustomed to see great problems faced by great men, and conquered by the weight of genius. There are no great men on this commission. The chairman, Mr. Willcox, is a lawyer, and he had been a park commissioner and postmaster of New York. Mr. Maltbie, another of the Commission, had been head of a Municipal Art Commission, and had studied the traction situation theoretically. Mr. Bassett had some first-hand knowledge of Brooklyn tractions. He is a lawyer. Mr. Eustis is a Bronx lawyer, whose public record is limited to the record of civic associations in that borough. Mr. McCarroll is a business man, with some theoretical knowledge of the problems of administration and operation of public utilities.

These men are all good men, public-spirited, keen for work, honest. They can't be bought, they can't be driven, they can't be coaxed. They can hire expert advice, and they have done so. What they lack in personal weight they can, if they so choose, make up in personal integrity and in willingness to subordinate their own theories to the practical knowledge of the experts upon whom they have authority to call. The problems of New York are essentially practical, and if this Commission does not meet them as such, the same gulf of oblivion yawns for them that lately swallowed up the Rapid Transit Commission.

The power vested in these commissioners is practically limitless, so long as the corporations remain solvent. They can regulate traffic, operation, capital, financing, even the appointment of men. They can build new lines or destroy old ones. These men can issue orders calling for the pouring forth of millions of dollars for new cars, new tracks, on every surface line between the Battery and the northern limits of the city, or between the North River and the farthest limits of the Borough of Brooklyn. They can increase the number of stations on the Elevated or the Subway, order a second, third, or fourth track laid on either line, condemn the pattern of the cars, change the entire signal system. If they thought best, they might to-morrow order all the curved platforms in the Subway taken out and straightened. They can do anything that will conduce to better traffic conditions on the two islands. This commission has a giant's strength, and may use it as a giant if it please.

Into this traction problem enter a thousand elements. The first is efficiency of regulation. Under our free system of administration, the problem is delegated to corporations, to which we grant franchises — sometimes selling them, sometimes giving them away, sometimes handing them over to our aldermen as political perquisites. These corporations build lines, buy equipment, sell transportation. All these things they do under a supposed regulation, namely, the terms of the franchise. The efficiency or inefficiency of this regulation depends upon the men who enforce it.

A TRAFFIC COMMISSION THAT WORKS

New York had a Rapid Transit Commission. It was a nice, respectable, gentlemanly old thing. It did good work, occasionally, and it was honest to the last degree. But it lacked "ginger," so to speak. It used to meet once a month, except in summer, when the traction problem is naturally most difficult on account of the extra holiday crowds. At that season the Commission was accustomed to take a holiday from its strenuous labors. Now a commission that meets once a month, except in summer, is not what one might consider the right kind of a commission to regulate the traffic problems of New York. As a reporter, I was in the habit of covering the meetings of this Commission occasionally. It was the easiest assignment in the world. Every now and again it amounted to something, but everybody knew about it beforehand. Normally, it was a leisurely walk up and a leisurely walk down again.

This other Commission has the "ginger." It meets once a day — from eight o'clock in the morning until nine o'clock at night — seven days in the week, fifty-two weeks in the year. Those are the hours during which the office is open. Now-a-days, the Commission is too busy to be bothered much about the office, but the secretary is there, and if anything needs immediate attention it gets it. Under the old régime, anything that needed immediate attention got it at the next meeting, perhaps a month later or so.

When an accident took place, it used to be reported to the Board in due form. In the meantime, it was fixed up somehow; reports were made on it by the company, the newspapers, and, in extreme cases, by the commission engineers. Now, if an accident happens prior to 9 P. M., the company must report it immediately by telephone to the Commission. An inspector, a photographer, an assist-

ant engineer rush out to attend to it. The report they make is checked against the company's report, which must be filed in writing within three days.

This matter of accidents is a subject to which the new Commission is paying special attention. In September, it issued a statement showing that in the first twenty-six days of August 5,500 people were killed or injured on the transportation lines in New York City. Of these accidents, 189 were serious, 42 people having been killed. That is a terrible showing, being from three to five times worse than the record for London or Paris. Of course, the fault lies partly with the public, but after all allowances are made for the recklessness of the American temperament, it is quite evident that the new method of the Commission came not a minute too soon.

One evening last summer the telephone in the office of the Commission brought in a hazy, indefinite story to the effect that a woman had been killed on a Brooklyn curve, not through any fault of the company but merely because the car was crowded. Inside of two hours, the agents of the Commission had checked the report in person. They found that the motorman had lost control of his car on a steep grade ending in a curve — one of those delightful curves with which all residents of Brooklyn are familiar. The car had taken the curve at terrific speed. The woman had been thrown bodily, by the lurching of the car, through a window over which the heavy shade was drawn, over the guard-rail, out into the ditch. That was the "blameless" accident on the "blameless" Brooklyn Rapid Transit.

Investigation revealed the fact that frequent complaints had been made with regard to this particular curve. Immediately, the engineers of the Commission went to work, laid out a modern curve, submitted their report to the Commission, and rested their case. The Commission ordered the old curve torn up, and the new one laid. It was done. That is practical work, not theory.

Anyone who lives in Brooklyn is familiar with the ash-cars on the Brooklyn Rapid Transit. It used to be the habit to meet up with them even in the rush-hours, on some of the surface lines. They were considered one of the regular afflictions of the Brooklyn Rapid Transit passenger, who, of course, took them as a matter of course, the same as he takes the two-mile walk across the bridge on the quite frequent occasions when a car breaks down. This matter of ashes was brought to the attention of the Commission. The company has been ordered to do its ash-removal work late at night, and under no circumstances to let it interfere with the movement of passengers in rush-hours.

Again, in response to hundreds of complaints, the Metropolitan has been ordered to increase its service on Broadway by about 20 per cent. and on Fourth Avenue by about 25 per cent. That is a big order, but it seems a practical one. At any rate, it is characteristic of the way the Commission is going about its business.

One must not imagine that all these things are done without giving the companies plenty of opportunity to be heard. When a complaint is made, a notice of it is filed with the corporation, with an order either to satisfy it within ten days or to appear before the Commission and show cause why it should not do so. In the latter case, a public hearing is held. In case the complaint seems well grounded, the company is ordered to do what ought to be done. If the company still objects, a re-hearing may be granted. That is final, except for the courts. If the company goes to court, its case goes direct to the Supreme Court of the state, where it takes precedence over all but election cases. It may go thence to the Court of Appeals, again taking precedence. A final decision, so far as the state courts are concerned, may be obtained in two months' time.

A MILLION-DOLLAR-A-YEAR EXPERIMENT

Of course, this machinery for the regulation of traffic is not cheap machinery. At present, it is hardly in working order, but even now it is costing at the rate of perhaps $750,000 per annum. When the Commission inherited the mantle of the old Rapid Transit Commission, it inherited with it the engineering staff, perhaps 300 men in all. This staff will be reorganized into departments of construction, equipment, and operation. It will be the source of the expert advice so badly needed by the Commission. The legal force is under the command of Mr. Abel E. Blackmar, who has already begun the reorganization of the department. The clerical end of the work will be handled by the secretary, Mr. Travis H. Whitney. A library must be collected, a statistical bureau founded, a department of gas and electricity created. In the long run, the support of the Commission and its working forces and machinery will cost upward of $1,000,000 a year.

Enough has been written to reveal to the public the nature of this gigantic million-dollar-a-year experiment that New York is making. The reason for the experiment is patent to every one in New York, or who visits New York. It lies in the fact that the corporations have failed to solve the problems of life in this city. They do not carry the people about fast enough, safely enough, nor comfortably enough. They do not supply light cheaply enough. They charge too much, perhaps, for carrying our goods from point to point by express. They kill too many people on the steam trains; they maim too many on the right-of-way. They take too long to deliver us our freight, and charge us, we say, too much for their poor service. Perhaps all these things are true; perhaps not. The people of New York have determined to find out, even if it does cost a million dollars a year. It is the first intelligent reply that the people of this state and city have ever made to the insolent question first propounded by Boss Tweed, since echoed by almost every corporation in the service of the people: "Well, what are you going to do about it?"

THE MEN THAT ARE HELD RESPONSIBLE

In the answer to the question are involved some very interesting characters, and some very interesting reputations. It must be admitted at the outset that, so far as the Commission has gone, most of the blame for the terrible financial condition of the street railways — that is, the surface lines — of Manhattan rests on the dead. Yet, Messrs. Ryan and Widener, in particular, appear not by any means blameless. Admitting that the Metropolitan Securities and the City Railway were little else than gambles, it remains to be discovered whether the gentlemen who re-financed these two holding companies into yet another holding company — the Interborough-Metropolitan — had a full moral right to mix this water of speculation with the wine of real value represented by the Subway and the Elevated. If this transaction is wholly blameless, then high finance is virtue, so long as it does not break the law laid down in the criminal code.

The burden of proof seems to rest pretty squarely upon the shoulders of the financiers. Outside of the Commission, the principal individuals involved in the muddle that has come about in this traction situation are Messrs. Ryan and Belmont, as the largest stockholders of the Interborough-Metropolitan, Mr. T. P. Shonts, as the operating head of the system, and Messrs. Adrian Joline and Douglas M. Robinson, the receivers of the bankrupt surface lines. As counsel for the traction magnates, two of the most eminent corporation lawyers in the country, Messrs. Elihu Root and Paul D. Cravath, are brought into the public view.

Most readers in this country have come to be pretty familiar with Mr. Ryan's face and figure. Mr. Belmont is a direct antithesis in many ways. Where Mr. Ryan is tall and gaunt and grim, Mr. Belmont is small and groomed and suave. He talks like a politician, always with diplomacy. He is not at all the type of the self-made American, hard-hitting, blunt, direct; but rather devious, evasive, inscrutable. He is not by any means so acquisitive as Mr. Ryan, nor, perhaps, so aggressive. The pair, coupled as they have been since the winter of 1905-1906, are foils for one another rather than complements.

It has always been a legend of Wall Street that Mr. Belmont represents pretty directly the fortunes of the Rothschilds of Europe, in so far as these fortunes have come over-seas. In a sense, that is probably true. Mr. Belmont has undoubtedly been supported both in the Louisville & Nashville Railroad and in the Interborough Rapid Transit by these great financiers of Europe. How far this backing will carry him in the matter of the Interborough-Metropolitan is a question. Mr. Ryan has, at times, had the friendship of the Morgan interests with him, though this, too, is said to be limited.

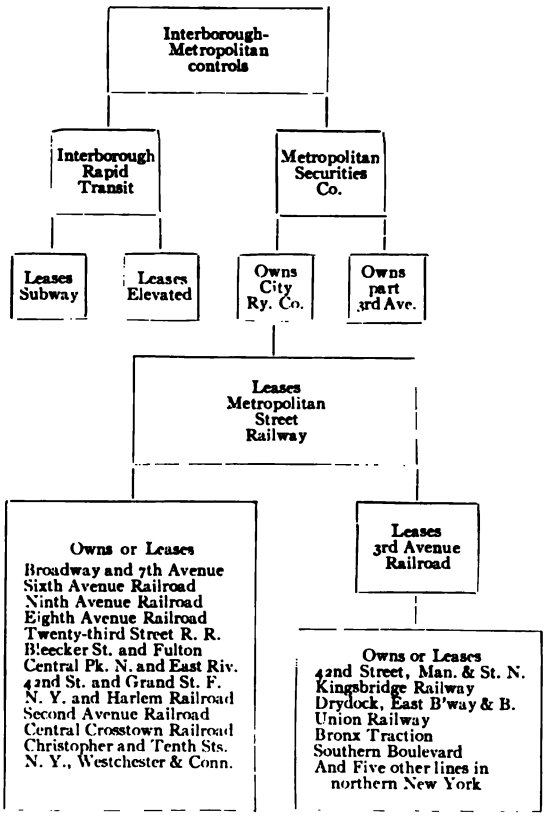
Mr. Shonts, their lieutenant in the field, is a railroad man of parts. He is the president of the road known as the "Clover Leaf," though its proper name is the Toledo, St. Louis & Western. He went to Panama to build the Canal, but gave it up because he found himself hampered at every step by the thing he hates above all other things, political red tape. He is a big, bluff, hearty, Western man. He hates indirectness. While the investigation was at its worst, he went to Mr. Willcox, the chairman of the Commission, and talked to him in vigorous, if not delicate, style. He told him that the Commission had started wrong. He complained that the engineering department was tied and tangled in red tape. He talked of ruin, and salvation. Just how the lawyer-chairman dealt with this apostle of vigorous action has not been disclosed, for Mr. Willcox is, above all, a diplomat.

Mr. Shonts stands in a difficult position. He knows full well that all the harm that could be done was done long before he ever had anything to do with the Interborough-Metropolitan. Yet he sees that his own destiny has become involved with this troublesome issue. He came in March, 1907. In September, half his kingdom seemed slipping away. He knows very well the difficulty of operating a road in a receivership, and he sees that his own chances to make the reputation for which he came to New York are not to-day so bright as they were six months ago.

As to the receivers, they may be taken as merely administrative. Mr. Joline is a very able financier and lawyer of the school that stands half-way between the old and the new. He is honest, but adroit. When Mr. H. C. Rouse died, a couple of years ago, he was called to be the chairman of the Missouri, Kansas & Texas Railway. His régime has brought to that property its era of greatest prosperity. His colleagues recognize him as able, straightforward, and thorough. He is close enough to the old school to believe that a bond is a bond, and not a mere scrap of paper. His colleague in the receivership is a skilful lawyer, lacking in any very wide experience in the administration of a great property.

There stands the problem of the day: on the one hand, the people and their Commission, fighting for more cars, more room, more speed, even though it break every company in the city; on the other hand, the holders of some hundreds of millions of dollars' worth of stocks and bonds — at their head Messrs. Ryan, Belmont, Widener, Vanderbilt, and Shonts, fighting for what they regard as their property rights, and calling on the Federal courts to guard them. It is a pretty problem. The answer to it will be either a fighting motto or an epitaph for the Public Service Commission.

THE TRACTION COMBINE IN MANHATTAN



NOTE:—The New York City Railway, in addition to its lease of the Metropolitan Street Railway, controls the Fulton Street, Thirty-fourth Street and Twenty-eighth Street crosstown lines, but operates them separately. It also owns some stock of the Third Avenue Railroad.

The receivership of September 24th affects directly only the companies that depend from the right end of the arm. These are the "surface lines" that cover Manhattan Island.

AMONG THE WORLD'S WORKERS

A LOBBYIST—FOR THE PEOPLE

ONE young man has completely changed the quality and method of legislation in the state of New York. A dozen defeated politicians have gone back to private life because of his work, and hundreds of pernicious bills have been killed in spite of the most insidious wiles of corporation lawyers.

Mr. Travis H. Whitney has done this in the four years since he left the Harvard Law School. To-day his name is a terror to crooked legislators and a menace to corporation lawyers. His weapon is publicity, and he acquired this weapon by making himself indispensable to the newspaper men at Albany. He was registered at the capitol as "a legislative agent." That means "a lobbyist." He represented the Citizens

Union of New York City. That means championship of clean politics and the public good.

At Albany, Mr. Whitney soon got to be familiar with the "underground" methods by which "blind" bills are put through the legislature — bills seemingly innocent, or even praiseworthy, whose effect, however, and whose real purpose, is to extend improperly the powers of corporations. Heretofore these bills had been put through with the connivance, sometimes through the ignorance, of legislators.

Mr. Whitney speedily changed this condition. He got acquainted with the newspaper correspondents at the capitol, and found that they were untrained in the art of finding the more subtle of these blind purposes in bills, and that they were laboriously spending four or five hours a day poring over the mass of bills that had been introduced, trying to make out the effect of each. Mr. Whitney brought up a lawyer for an assistant, and soon the newspaper men found that within an hour after a day's bills were introduced, they could get a typewritten analysis of all of them on a desk outside Mr. Whitney's office — one copy for each paper.

This analysis showed exactly what the intention of the bill appeared to be, but also exactly what its whole effect would be, with notes on the probable intention of it — an intention that, in many cases, even the man who introduced it had no idea was in the mind of the friend or constituent who asked him to introduce it. No part of this analysis could be quoted: it was only for the guidance of the reporters. But in cases in which the Citizens Union wished to protest against especially vicious legislation relating to New York City, Mr. Whitney would add a comment in brackets for quotation. The reporters' work on the study of the bills was reduced from several hours a day to a few minutes, by these analyses. The analyses were so unprejudiced that no reporter in the four years ever questioned their accuracy or fairness. And the instrument of publicity that Mr. Whitney created through them was so powerful that not one important bill that he opposed passed the legislature. Members of the legislature got the habit of coming to him for an analysis of bills before they would introduce them. Other members who supported bills after he had exposed the true nature of them, found their names and votes in unpleasantly conspicuous places in the newspapers of their home districts the next morning. Corruption ceased to pay. Legislators realized that their political future was being shaken by a nod from the quiet, broad-shouldered young lawyer who smiled at them over his glasses.

Some legislators had to learn this by defeat in conventions and at elections. Mr. Whitney made a report on the character of every member of each House, and these reports were often effective after they were printed in the papers.

The following is a specimen report:

"———, ——— (Republican, —th Kings). Conspicuous because of his undesirable special and personal legislation; his efforts to break down the civil service laws and his bills creating unnecessary salaried city officers; amends his bills for the worse from the floor, when there is little attention given such amendments; intelligent and dangerous representative, should be defeated."

That report, backed by a year of publicity work under Mr. Whitney's direction, sent the Senator back to private life, defeated by 800 votes in a district that gave the Republican candidate for Governor, whose name appeared on the same ballots, 8,000 majority. At one election, every Republican senator in Brooklyn was either refused the nomination in convention or was defeated at the polls as a result of these reports.

At the last session of the legislature, the Citizens Union felt that it should change its attitude of distrust toward former administrations to coöperation with the administration of Governor Hughes. Mr. Whitney suggested to the Governor the advantages of such coöperation. Mr. Hughes investigated the work of the People's Lobby, and verified all of Mr. Whitney's claims for its integrity and efficiency. Thenceforth, he and Mr. Whitney worked in harmony. Instead of having to wage a campaign of publicity against a bad bill, it was usually sufficient that Mr. Whitney should point out to the Governor the viciousness of it, and then wait for the legislators to find out that even if they passed it the Governor would not sign it.

On the other hand, Mr. Whitney used his weapon of publicity to back the Governor's policies. This publicity was used to such effect that the suggestion of an amendment to the Public Service Commissions Act, which was the Governor's favorite measure, was regarded throughout the state as dangerous, and the legislator who made such an amendment found from his next day's mail that he

was regarded by his constituents as under suspicion of corruption. The Act passed triumphantly, in the face of the opposition of powerful corporation lobbies and of the old political machine, in the form approved by the Governor. The efficiency of Governor Hughes's administration has been largely due to his wise use of the publicity bureau under Mr. Whitney.

When Mr. Whitney resigned, he had defeated hundreds of pernicious legislative measures, and he had caused the retirement from public life of several men who were conspicuous in pushing bad bills through the legislature. No one has taken his place, though the Citizens Union will probably fill it at the next session of the legislature. No state official is charged with his work. In Wisconsin Mr. Charles McCarthy has done such effective work of the same kind that a state office has been created for him, where he analyzes and exposes bad legislation and assists legislators to frame bills that will avoid the usual pitfalls. Plans are also under way for the formation of another people's lobby at Albany that shall watch legislation affecting the whole state as Mr. Whitney watched legislation affecting New York City.

A SCHOOL TEACHER WHO ORGANIZED A COMMUNITY

IN SEPTEMBER, 1904, Miss Mabel Carney, a young Irish girl just out of normal school, began teaching in a country school in Putnam County, Illinois. Her pupils were few, the building dilapidated and poorly equipped, the site unattractive, but she was a teacher with practical ideas. Two neighboring schools were in a condition equally bad, and Miss Carney went to work on a plan of consolidation. She talked consolidation of these three inefficient country schools until she had won hearers enough to put the question to a vote in the spring of 1905. The electors voted down the proposition that year, but the young teacher's consolidation plan was adopted at the election in 1906. Here are some of the concrete results:

Mr. John Swaney, a public-spirited citizen, gave twenty-four acres for a campus — a campus for a country school! The people of the three districts voted $18,000 to make the building one of the best schoolhouses in Illinois. Wagons carry the children who are too remote from the building to walk. The principal of this country school is paid a salary of $1,000 a year. On the campus is an agricultural experiment plot of six acres, conducted in coöperation with the School of Agriculture of the State University, and a large tract of natural forest. A four-year high school course is offered, with liberal opportunity for election of studies. Country boys and girls may here study agronomy, animal husbandry, horticulture, domestic science and art, and all phases of work vitally related to the fundamental needs of a people living in the country. "Culture" subjects are not neglected, but the real basic interests of culture among an agricultural people are given due emphasis. An enlarged country neighborhood has been bound into a coöperative social unity, whose possibilities for higher culture are not inferior to those of cities of 10,000 people. These are the products of the two years' work of a young girl with the right ideals.

The principal of the Western Illinois Normal School soon "discovered" this teacher and made her the supervisor of a model country school, as an aid in solving the problems of the country schools of Illinois. A formerly dilapidated country school two miles from the Normal School is the present site of her efforts. In the summer term of the present year, seventy country teachers came to study her methods. These country teachers organized themselves into an association, probably the only one of its kind in this country. It concerns itself solely with the problems and interests of country teachers and country schools. Its strong appeal is to "make life large and lovely for the country child."

The consolidation of schools is but one of the methods for the betterment of country schools. Strategic districts will be systematically educated into consolidation. Others will be helped to solve the problems confronting them through the one-room, ungraded school. Every member of the organization will go constructively to work to contribute some definite item in the direction of betterment. The Irish girl with the practical ideal has partly solved the problem, and the Country Teachers' Association will aid materially through its individual and coöperative attack upon the smaller problems which together make the larger one.

THE NEW SCIENCE OF BUSINESS

ABOUT GOOD BUSINESS LETTERS

A BUSINESS man's stationery tells something and sometimes tells much about him. A country storekeeper often uses cheap paper, emblazoned with a glaring letterhead in two or three colors, telling all the things that he sells; but a big firm that does fifty times as much business is more likely to have only a small letterhead, with a simple line in black type giving only the firm's name and address. The difference is in dignity and self-confidence. The quality of the paper used is very well worthy of attention. Then, a bad typewriter can spoil the best possible letter by a misspelled word, by incorrect punctuation, by bad spacing, or by ragged alignment. Such slovenliness produces the suspicion of like indifference in the execution of business. A neat, accurate page is a strong indication of care and of pride in doing a workmanlike job.

Of more significance than its physical appearance is, of course, the wording of a letter. The writer's personality shows through his words. One man's letters convey an impression of a strong character, judicious, business-like. Another man's letters are hurried, and full of repetitions, conveying the impression of lack of judgment and of a compact mental habit. Clear expression is the result of clear thinking; and clear thinking is the basis of business success. Thus, when a man resolves that no poor letter shall ever leave his office, he resolves also that he will develop his judgment by giving enough thought to his ideas to make them clear to himself.

A good business letter is never commonplace, because a sound business judgment is not commonplace, for it involves interesting and important consequences. But when you read "Your favor has been received and contents duly noted," it is hard to believe that a real man, or a man of any originality is behind that letter. A more silly vacuity was never written. Translated into common sense, it means this: "I received your letter of such a date, or I would not now be answering it. Having got your letter, I read it." Foolish, isn't it? But millions of moments of time and millions of drops of ink have been wasted on that sil monotonous sentence.

A good letter does not contain repet "Saying the same thing again in a di way" does not emphasize an idea: i confuses it.

Again, a good letter is courteous. Cc makes friends. Much of it may seem wasted on some people but a firm that on unusual courtesy in all its correspoı will find instances of its value in places it least expected appreciation of it.

A good business letter has individua conveys some of the winning or succes dominant qualities of the writer that make him pleasant to know or succes business. To do this, it must contain the ness and vigor that come from clear thou its subject, and it must show that the had the particular recipient in mind wl wrote. If he does not, the reader will lively sense of personal dealing with an able man.

These impressions are of great impoı For instance, one large mail-order house, entire business is dependent on the effecti of its correspondence, figures out to the fı of one per cent. the relative value of two soliciting business for the same thing at th price. They find that one letter brings ı and another does not.

A magazine publisher in New York his success in getting renewals of man tracts for a certain class of advertising sentence, run as a postscript to his The sentence was merely a courteous rem The letters that contained this postscript conclusively their greater value over the that did not.

A business letter betrays to the disc reader whether the writer takes a g personal interest in his business—whet really cares for it, or is doing it onl perfunctory way; and every reader is fa discerning than the careless busines thinks. A man shows his character correspondence.

The World's Work

WALTER H. PAGE, EDITOR

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A CLEARING-HOUSE FOR MERCHANTS' ACCOUNTS RECEIVABLE

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MR. MARCONI AND HIS ASSISTANTS, AT GLACE BAY, N. S.

WHERE SUCCESS IN TRANSMITTING WIRELESS MESSAGES ACROSS THE ATLANTIC MARKS THE BEGINNING OF A NEW ERA IN COMMUNICATION

(See "Transatlantic Marconigrams," page 9024)

THE WORLD'S WORK

DECEMBER, 1907

VOLUME XV NUMBER 2

The March of Events

THE closing year has been a year of instructive experiences and of wholesome lessons for the people of the United States, for it has been a year of gain in character; and the main gain in character has been in setting a higher standard in the conduct of corporate business.

A SEASON OF SOBER JOY

THE setting of a higher standard in corporation morals is the great fact of the year. We have not yet such a universal application of a high standard as to warrant boasting; for a panic came in New York only the other day, chiefly because certain banks and trust companies were so loosely managed that the public lost confidence in them and to a degree in many other financial institutions. But the saving fact is, those that were guilty of mismanagement were instantly deposed by a self-appointed court of safety. We are making a steady and noteworthy gain year by year, revelation by revelation. A few years ago dummy directors were common. There are fewer of them now. More corporations make frequent and full reports to their stockholders than ever before. All along the line there is a "pulling up." When the late Mr. Eckels was asked to accept the presidency of a bank in Chicago, he made it a condition of his acceptance that no director of the bank should ever borrow a dollar from it. This story used to be told as an exceptional experience. Such a code of care is now almost common, and corresponding scrupulousness is observed throughout the conduct of many corporations. Of course the morals of railroad corporation practice have risen continuously since public supervision became serious.

II

Railroad regulation, in fact, and the effort to prevent corporations from violating laws that forbid restraint of trade have held the public attention almost to the exclusion of other large subjects; but the events and activities of the year have thrust forward several deferred important duties so that they now call even more loudly than before for action. First among these duties, perhaps, is the devising of an elastic currency. The truth is, the whole body of laws touching banking and currency needs revision.

There has come, too, an earnest wish to improve the inland waterways, following the demonstration of the railroads' inability to supply shipping facilities. This follows the successful work of the General Government in irrigating desert places and in carrying out a wise forest policy. It is a part of the same large movement to preserve and to utilize more intelligently the great natural advantages and resources of the country.

The same general thought finds expression in the demand for industrial training, for the lack of which our greatest resource of all goes more or less to waste—our resource of efficient manhood. There is a strong movement for training the young to useful trades.

The foremost deferred duty of all is the revision of the tariff, which cannot be much longer delayed, in spite of Mr. Roosevelt's

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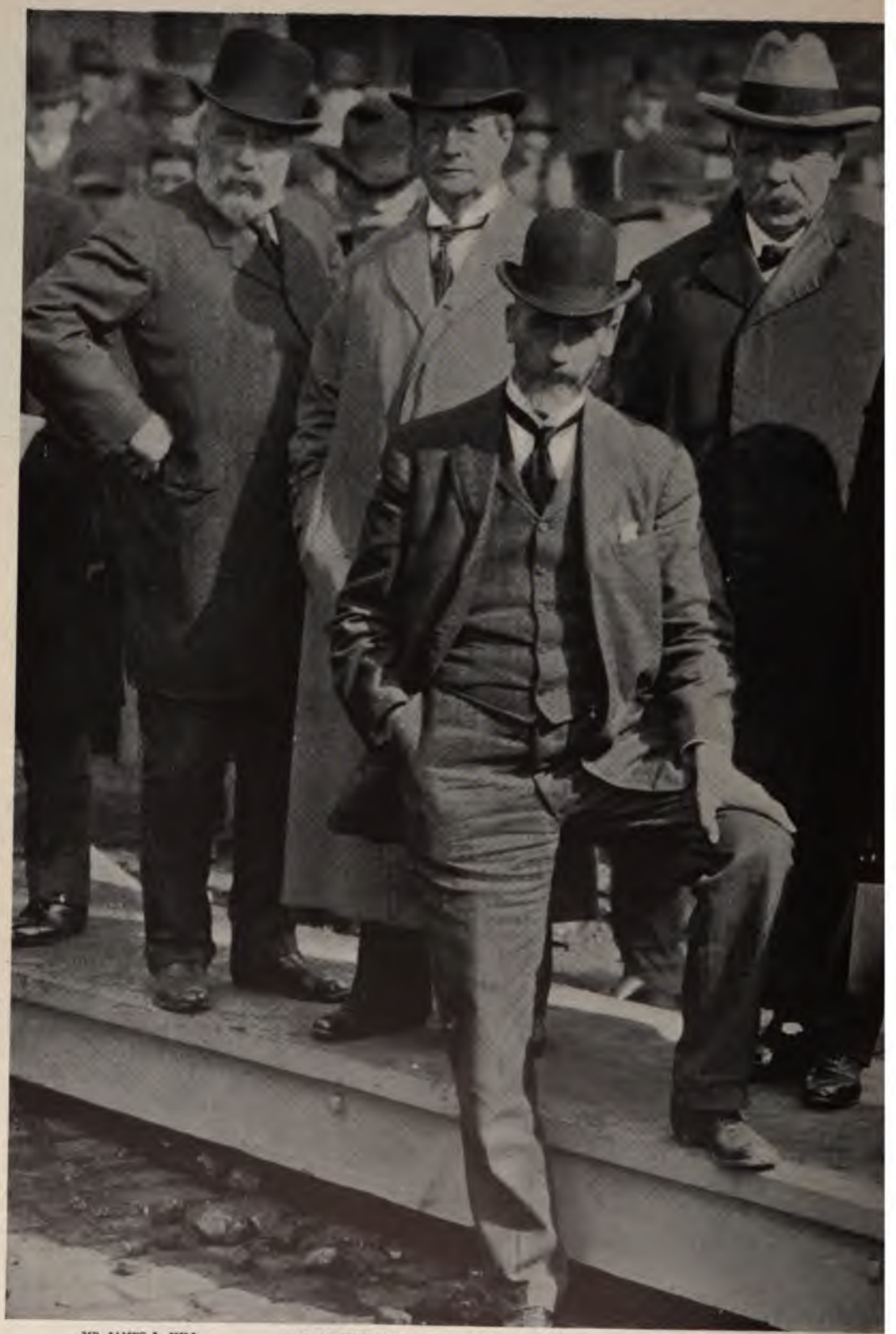

MR. JAMES J. HILL SENATOR NEWLANDS MR. F. H. NEWELL SENATOR WARNER, OF MISSOURI

LEADERS IN THE RECLAMATION OF THE WEST

MR. NEWELL IS THE DIRECTOR OF THE U. S. RECLAMATION SERVICE, WHICH IS RECLAIMING MILLIONS OF *ACRES OF* DESERT. SENATOR NEWLANDS WAS THE SPONSOR OF THE RECLAMATION ACT IN CONGRESS

[*See "The Real Conquest of the West," page 9691*]

MR. OSCAR ERBSLOEH, WINNER OF THE INTERNATIONAL BALLOON RACE
WHOSE BALLOON, THE "POMMERN," MADE THE JOURNEY FROM ST. LOUIS TO ASBURY PARK IN ABOUT FORTY HOURS

forgetfulness of it and Mr. Cannon's leaden objection.

III

The great phenomenon of the year, which during its closing months may be less in mind than it was half a year ago, is the unmatched industrial prosperity of the people. No eighty millions of persons ever before had such an experience, such an easy and quick passing from the stage of struggling to the stage of some measure of material success. No wonder production has outrun capital.

And the industrial gain thus made is permanent. The fall of securities, the rise of interest, the slacking of the abnormal pace of progress mean little in the long run — little that is really harmful. In fact, in the long run, they mean much that is helpful; they mean the extension of sound methods and of conduct built on character to a wider and wider range of activity. They mean the still further building up of American industries in the confidence of the world. Then, with increasing scrupulousness of method, we shall go on developing the yet incalculable wealth of our land and the great ability of our people, to their own well-being and to the well-being of the whole world. Not the least fortunate phase of the marvelous prosperity of these years is this temporary halt which we will use to take an inventory of our methods and of our aims.

And while we have been developing our own continental area, we have, also, been setting up and working out better industrial and governmental methods in our tropical dependencies. The conquest of the tropics, first by sanitation and then by industry and the training of their peoples, is a big chapter in the achievement of these years.

Christmas, therefore, will come to us with a sober joy. Our prodigious responsibilities are wholesomely sobering. We are living in a period of our national history when we are adjusting our governmental machinery, our financial mechanism, our social life, and our very character, to the new great industrial forces that are transforming the conditions of work and of living — transforming, therefore, our relations to one another and the relations of our country to the rest of the world. We are richer and more powerful than men or nations ever dreamed of becoming till our era. We, therefore, face the responsibilities of great power and of great wealth; and we must make sure that we grow up to them and are not dwarfed nor deflected in our development. These are reasons for soberness.

And that we are so fortunate as to have had such thrilling new experiences in the long-fettered, slow, upward struggle of the race, is cause for joy. Most human beings for indefinite centuries paid tribute to warriors or lords, temporal or spiritual — lords who could not even keep the plague from men or beasts; and most men even now bear arms, for short periods or long, the cost of which keeps them peasants for generation after generation. Our chief reason for joy is the boundless opportunity that is ours for indefinite human betterment by reason of free institutions and the advances of science. For the physical sciences are bringing to us a new kind of freedom and are opening doors of hope never known before.

THE MOST CONSPICUOUS MEN OF THE YEAR

AMONG the public men who have made the strongest impress on events in the United States during the year, the President stands first. Enemies and friends alike grant this. But his two conspicuously able secretaries, Mr. Root and Mr. Taft, who make this Cabinet a very notable one, have furthered his policies unceasingly and in unusual ways. One is returning through Europe from an errand of peace to Japan and an errand of help to the Philippines; and the other made a journey around South America and subsequent visits to Canada and to Mexico with most excellent results. The "anti-imperialist" nonsense that used to fill the air — we hear no more of it. That is a relief as well as a measure of sane progress. The jealousy and real unfriendliness of South American public feeling toward us—we hear no more of that either — another relief and measure of sane diplomacy.

Mr. Taft has come into prominent public regard also as a possible and perhaps the most probable candidate for the Republican Presidential nomination. His character and his public services commend him, and his service has been both more varied and more noteworthy than any other candidate's. But he has not had time nor taken the trouble to cultivate the mass of voters. Everybody has read of his services; some have heard him make speeches; but he has not so come in contact with the masses as to impress them with his personality at close range. Of course, the corporation managers who regret the passing

LARK WILLIAMS, SUPERINTENDENT OF BANKS IN THE STATE OF NEW YORK

[See "The March of Events," page 9615]

of the days of unaccountability do not love him; nor the machine men of his party; nor the labor leaders, if they be supposed to count for anything in politics. But he stands for the policies that the people most heartily approve, and he is at least the "logical" candidate for the Presidency.

Governor Hughes, of New York, too, has grown steadily in public influence and in public favor; and he has caused men who have good memories to recall that New York once had Tilden for its Governor, and at another time Cleveland; for these three have this in common—that they do not know what "party pressure" is.

Governor Hughes's greatest achievements have, of course, been the forcing of new insurance legislation and the forcing of the Public Utilities law, whereby New York public service corporations seem likely to be made responsible public servants. These are two very great achievements for the public good; and Governor Hughes's quality of unwearying and unswerving pursuit of public duty has made a strong impression on the people in every part of the country. Every man from New York who has been West during the year and talked of public men or measures has been asked time and again for some personal information about "your man Hughes."

He has done more for the effective supervision of two classes of strong corporations than the Governor of any other state. He is, therefore, thoroughly committed to such supervision and regulation; and the fact that his machinery has been a state government has pleased those who look with disquiet on national supervision. To what extent he would use the National Government for this end as he has used the state government, nobody knows; for among Governor Hughes's other qualities is the quality of reticence about subjects that do not immediately engage him. That quality, too, commends him, during these particular years, to men of a particular temperament.

Mr. Harriman has been in the public mind this year and before the public eye as the most powerful, not to say reckless, "magnate" of the old-time type—of the old-time type of autocrat but with a new-time ambition to control the traffic of the country as no other man, perhaps, ever dreamed of controlling it. His audacity has dazzled the public. But the culmination of his career came too late for his ambition to be fulfilled. It belongs to the old freebooting days and ways, and it is becoming increasingly impossible in these times of supervision and regulation — in these times when great corporations do not quite so easily fall under the autocratic sway of one man whose actions must never be questioned. He is probably the last of the great railroad "kings" of his particular kind. The future seems likely to have great leaders rather than great autocrats. What the public has gained in attention to its necessities and to its rights in the premises may conveniently be measured by the difference between Mr. Harriman's attitude to the public now and his attitude a year ago.

THIS CHRISTMAS AND THE AVERAGE MAN

THE average efficient man fortunately is not directly affected to any disastrous degree by the fall in prices of stocks and bonds. If a financial stringency become acute and long-continued, everybody suffers to some extent; but, after all, the man who grows wheat or cotton or corn successfully and who has managed his affairs well during these past years of great prosperity, the man who works for a salary or wages and who has done his task so well that he cannot be "laid off" as soon as a little slackening of work begins — in a word, the efficient man among the working masses of society — has every reason to welcome Christmas with gratitude and without fear of the future.

Such men have better homes, have more property, have better provision for their children, than the same class ever had before; and these things are the bases of living that strengthens and develops character.

To the average efficient man, in fact, such a slackening of our financial pace, if it be not too severe nor too long-continued, will bring some definite benefits. It stops the growth of the ostentatious luxury of the rich, which has a continuously demoralizing effect on that class of society that is only well-to-do. It causes every prudent man to revise his ideas of luxuries and of necessities, to come back, if need be, to simpler ways of thought, to plainer ways of living — to readjust himself to permanent rather than to temporary forces.

The Christmas season will be full of lasting blessings to men who use it to make sure that their habit of living, their habit of thought, their habit of work, is the normal and sane

habit, the habit that makes for success in the long run rather than on a sudden, that makes for steady progress, for health, for quietness of spirit, for good ideals, and for love of the work that lies at one's hands.

A BAD OUTLOOK FOR CAMPAIGN FUNDS

BY a series of uncomfortable jerks and thumps, the managers of the last Presidential campaign are reminded, now from this "revelation" and now from that, of the large contributions received from undesirable friends or directly from the treasuries of public service corporations. Congress did not have the courage at its last session to pass a law requiring full publicity of accounting from campaign managers; and it may lack the courage to do so this winter. We are not yet near the millennium. Even if the eminent politicians in Congress desired such a law and were to pass it, all the secrets of campaign receipts and expenditures would hardly be made known; for there are similar state laws that have failed of complete success.

But there is a public demand for a Congressional effort to prevent the scandals of past campaigns, even if the effort should go no further than to commit Congress to the principle of publicity about election funds.

Yet, whether such a law is made or not, we are not likely to have a repetition of the doubtful practices of the last campaign, to say nothing of the worse practices of preceding campaigns in the golden days of Chairman Hanna. The life insurance companies in New York are forbidden to save the country again by generosity with their policy-holders' money; some at least of the great railroad kings have learned that the supposed purchase of official friendliness is not always "good business"; and corporations in general will think twice before they risk such public criticism as some of them have received for doing precisely what they had so long done in routine that they had come to think it proper and necessary. Even the old-time purchasers of tariff protection may not be certain of the customary *quid* for their *quo*. The committees of the next national campaign, therefore, may really be as poor as good Judge Parker thought the Democratic committee was in 1904, and as full of enforced virtue. A campaign without enough money even to make the customary noise might show the better what the people really think.

A RADICAL CHANGE IN GOVERNMENT METHODS

THE time comes nearer, of course, when old, strong, selfish reasons for filling up the campaign coffers will cease to be compelling reasons. The purchase of tariff protection, the pressure of a threat of debased currency, the old close alliances of Senatorial cliques with great corporations — these strong reasons for giving freely are weak or are gone; and every step toward sound methods in finance and in corporation management brings the Government nearer to the people and makes it more responsive to the people's wishes. The more responsive it is to the people's wishes the less campaign money there will be.

Every student of modern governments knows that the methods of our Government have changed less during the last hundred years than the methods of almost any other civilized government. The framers of it had two great fears in their minds — the fear of a possible king and aristocracy, and the opposite fear of trusting the yet untried people too far. To prevent the popular moods from expressing themselves in governmental action, they devised the elaborate system of checks and balances which includes such devices as the electoral college, the election of Senators by state legislatures, and the Presidential veto. Most of these and other such "checks" have either fallen into disuse or have come to be used for other reasons than the reasons for which they were devised. The electoral college, for example, has become a mere form, and the people elect the President; the election of Senators by legislatures has been practically nullified, and the people elect Senators, in many states; and even the Presidential veto is much more often used in order to have the will of the people expressed in legislation than it is to guard the Government against any popular craze. The whole tendency of our political development has been, as far as possible, to make the Government more directly responsive to the people and to set aside the "checks" on the popular will, of which the fathers were afraid. We have proved, as the English have proved, that the will of the people is the safest force in any government that even approaches a democracy.

II

The gravest political danger of our time, therefore, is just the opposite of the danger that the fathers feared. Our great danger has been, and is, that the will of the people will not be

expressed in government. It has not been expressed when great corporation-given campaign funds have decided elections. It has not been expressed when high financial interests have had undue influence in the Capitol. It has not been expressed when tariff "deals" have been made for special industries. It has not been expressed when state laws and administrations permitted men to put in jeopardy the deposits in trust companies and the money of policy-holders. It is not expressed now when our great financial machinery is such that it can to too great a degree be operated by a small group of men.

III

This course of reasoning explains the extraordinary popularity of Mr. Roosevelt, which is far more than a personal tribute to him. It explains why his popularity has grown constantly greater under the bitter criticism of the high financial classes. It explains why the outcry against his "autocratic methods" — his very "trampling the Constitution under foot," as some of his political critics express it — has made him more popular even among many of the old-time strict constructionists of the Constitution. When the Senate and the "great interests" that have been unduly represented in the Senate were pursuing their own aims rather than the public aims, the President has done, by short cuts if need be, what the people wished to have done. Thus he has become in an extraordinary way the instrument of the will of the people, in spite of "checks and balances."

The people feel that when they elected him they really brought something to pass — that he is their instrument and agent. There is, therefore, a very much deeper meaning in Mr. Roosevelt's popularity than temporary applause.

IV

If the body of intelligent public opinion could get direct control of the Government to-morrow, without delay and without check or red-tape, some of the things that it would do are these, as anybody may see:

It would make provision for an elastic currency, so that when more money were legitimately needed it could be had, under proper safeguards.

It would so supervise banks and trust companies and all other institutions that have the people's money, that the managers of them could not control nor risk the money of the people.

It would so supervise corporations that they could not deceive the people about either their products or their securities, and so that they could not show profitable special favors to any class.

It would prohibit great campaign funds.

After these things had been done, it would not be very long before it would be in a mood to revise the tariff, which (as it now stands) is an aggregation of special favors.

The "checks and balances" that stand in the way of these changes will pass; for the people are becoming earnest. Every such event as the exposure of the traction iniquities in New York and every such event as a panic precipitated by a "copper king" and an "ice king" and a "steamship king" and their "banking" methods and allies, makes them more earnest. All such events, too, make for the ultimate enlargement of the people's direct power in the conduct of their own Government. They are steps in a great and general change that is taking place in our governmental methods, a change from the hindering checks and balances whereby special classes have had undue power and undue privilege to a more direct rule of the people. Thus is explained the apparent paradox that the extension of governmental power is really the only means of bringing the people more directly into the control of the Government; for the extension of governmental functions is the surest method of getting rid of the "checks" that have kept the people's will from becoming operative. And thus it is that the old strict-constructionist school of thought is apparently swinging toward the enlargement of the Government's powers. For the enlargement of the Government's powers is the enlargement of the people's powers.

THE MEANING OF THE OKLAHOMA MOOD

THE effort of the people — a sort of blind push — to get more direct control of the government is shown in a most conclusive way by the constitution of the new state of Oklahoma. That is one of the most remarkable instruments of the kind that was ever drawn. It is the product, of course, of a time of governmental regulation, of a somewhat raw political community, and of an unphilosophic conception of constitutions. This is not the same as to say that many of its provisions are not wise.

But a close study of it reveals the very popular temper of which we are writing. The framers of this unusual instrument betrayed a fear of the usual machinery of representative government. They are distrustful of checks and balances. They wish to make sure that the people themselves — as nearly as possible the whole people — may keep a direct hand on the government. In fact, the referendum clauses have been criticized as being possibly in violation of the Federal Constitution, because the "republican form" of government, required by the Federal Constitution, means government by duly elected representatives of the people rather than directly by the people themselves. But the people of Oklahoma may by ballot annul laws made by their legislature. They may even initiate laws. Perhaps this criticism of unconstitutionality may be theoretical rather than practical; but the fact that it could be seriously made by well-informed men shows to what extent the people have endeavored, in a mood of disgust with legislatures and congresses, to retain power in their own hands.

In fact, all the popular tendencies of our time are in the same direction. We are having a rebound from the long period of popular helplessness under party and legislative management. The two most noteworthy practical phenomena of the day have the same meaning — the popular approval of a President who is forever striving to get something done, and the coming into the Union of the newest state with a constitution that is meant to leave practically all power in the hands of the people themselves.

THE QUALITY OF REAL LEADERSHIP

IT IS a vicious system of things that puts it in the power of a few adventurers to cause a great disturbance in the financial world; but, so long as we have this vicious system, we are lucky to have the benefits as well as the disadvantages of it. Since it was in the power of a few men to upset for a time the great financial structure in New York, it was luckily also within the power of a few men to stop the disturbance before it became ruinous.

When panic reigned in Wall Street and lesser men lost their heads or were using the demoralization as a means of profit, Mr. J. Pierpont Morgan, though now an old man and a man who some time ago was thought by many to have lost his great power, was the one man under whose masterful leadership confidence was restored. The conservative and patriotic forces in high finance looked instinctively to him. He gathered these forces together and with his own financial resources and theirs poured millions of money, at a reasonable rate of interest, into the market, till the tide toward disaster was stopped. Mr. John D. Rockefeller, too, who long ago retired from active business and whom the general public does not often admit to its favor, opened wide his treasure chests and without gain — above a reasonable, routine rate of interest — supplied money to the panic-threatened institutions. These men deserve public gratitude for this patriotic action — more gratitude, we imagine, than they are likely to receive. It is worth remembering that few if any other men who are regarded as great financial leaders in fair weather were on duty as safe pilots during that sharp squall. Some were getting high profits from the misfortunes of the time. Some were showing that they were not real leaders of men. After all, leadership is a quality that cannot be assumed. It cannot be put on for a particular occasion. It has the power to recognize a great occasion and to act unselfishly and to think about it afterward, if it thinks about it at all.

FIXING BLAME BY A CHILDISH PROCESS

TO BLAME President Roosevelt for the panic in Wall Street is a childish refusal to think. True, his prosecution of industrial corporations for violating the law has lessened the market value of their stocks and bonds. In the same way, his efforts to regulate railroad management, which provoked efforts by some state governments greatly to reduce railroad rates, has disturbed the market values of railroad stocks and bonds. In the same way, too, and to a greater degree in New York, the new Public Utilities law brought disaster to the stocks and bonds of the dishonest web of traction companies; and heaven be praised that it did. All these events caused loss both to dishonest and to honest men, as the righting of every accumulated wrong does. These events helped, too, to make the panic more severe, for they played an important part in disturbing public confidence. But to blame Governor Hughes or President Roosevelt for enforcing the laws is the same as to say that accumulated financial crimes must be left unpunished because some

innocent persons will lose money if you disturb existing conditions by investigations and prosecutions. The criminals would like nothing better than this. They never wish existing conditions to be disturbed. They are always solicitous about widows and orphans and innocent investors; and when a part of the public falls to blaming persons in authority for enforcing the laws, they play directly into the hands of the criminals.

President Roosevelt has received a larger and bitterer share of blame than Governor Hughes, because the President is not a silent man and the Governor is. The President talks even while the market tumbles, and, as some regard it, it is a crime to talk then. But not having cultivated silence during any part of his forty-nine years, it is a somewhat humorous if not unreasonable expectation that he should stand mute even while values tumble in Wall Street. For that matter, if he had stood silent, the great financial interests would have railed at him for not saying something. We all like to find somebody to blame for our misfortunes, and we generally do find somebody, however illogical the process.

THE CAUSE OF FINANCIAL LYNCH LAW

THIS depression and the panic would have come if Mr. Roosevelt and Mr. Hughes had never been born. The forces that made it inevitable were several times explained in this magazine before the crisis came. The unmatched expansion of productive industry in the country and in the whole world had outrun the supply of capital. The pace could not be kept up. There was tension everywhere. And along with the expansion of legitimate industry had come the usual activity of financial and industrial adventurers. The theft of great street-railway systems in New York City, the use of depositors' money in some banks and trust companies for the hazardous private enterprises of men who controlled these companies or had access to the funds, of course aroused public distrust. These acts ought to have aroused public distrust long ago; but the public is a long suffering and trustful creature until it becomes panic-stricken, and then it acts with emotional fury. The most direct and effective way in which it could show its distrust was to make runs on suspected banks and trust companies.

This public suspicion, moreover, was justified in most cases. The powers of the financial world instantly deposed several of the worst offenders — offenders who would have been deposed before if the national and state laws for the supervision of banks and trust companies had been fearless and rigid.

That was the immediate cause of the panic — the justified public distrust of some banks and trust companies in New York; and since this violent distrust came at a time of increasing financial tension, the wonder is that the damage was not worse than it was. Men stood in line day and night to get their money from these suspected institutions. Millions were withdrawn from other banks which were as sound as Gibraltar, because timid men did not know what might happen. For days such men carried tens and hundreds of thousands of dollars on their persons. Safety vaults were filled with money by the satchel-ful. Women drove to safe-deposit companies in automobiles and took rolls of bills from their stockings and locked them up. It was a panic — a panic precipitated by the demonstration that the men who control great traction companies had enriched themselves at the companies' expense and that financial adventurers had misused the money of the people that was deposited in some financial institutions. It could, therefore, hardly be called a foolish panic. Since the law had not prevented such crimes, the only way the public could save its cash and punish the criminals (along with the innocent) was the crude way that it took — the method of directly expressing its distrust by using a sort of lynch law. And we shall have periods of such lynch law until we have adequate laws, rigidly enforced, to prevent such crimes.

THE MORAL GAIN FROM FINANCIAL SHOCKS

THE moral gain is not hard to see. Our financial stability, even our very civic stability, demands that all trust money shall be managed and safeguarded under efficient supervision armed with enforceable laws — as well, for instance, as the funds of savings banks in New York and Massachusetts are managed and safeguarded — and that all trust power, such as the power of the directors and managers of corporations, shall be used safely, under efficient supervision armed with enforceable laws; and recent events have brought us a long step toward such safety.

It is a very impressive chapter in our history that is made up of the series of events during the last few years, whereby the natural

weakness of corporations has been strengthened by the demands of the public conscience. For such a strengthening is precisely what we have been going through, shock after shock. The corporation, by its very nature, gives an opportunity for careless men to shirk the responsibility of their actions, and even for criminal men to take advantage of the real owners of the property — the scattered owners of the corporation's stocks and bonds or funds.

We had the period of dummy directors, which was a period of irresponsibility. We had the period — the same period in part — of criminal disregard of stockholders' (and policy-holders') rights. This was the period of Jay Gould in railroads, the subsequent period of the mismanagement of the great life insurance companies, the period of trickery and manipulation and theft in street railway companies, the period of dishonest organization and reorganization of industrial companies — the period of loot by one method or another to which the corporate form of ownership easily lends itself when there is not proper public supervision. The subsidiary, or parasitical, or complacent and convenient trust companies were admirable financial tools in these operations. It is little wonder that the plain people became angrily suspicious of almost all great corporations when for ten or even twenty years one kind of corporation after another was used by reckless and dishonest men in disastrous ways. And it is a great wonder that efforts to bring them under proper supervision, such as have been made by executives like Mr. Roosevelt and Mr. Hughes, have kept the people from violent action such as would follow the election of the apostles of confiscation.

Instead of rushing from bad to worse — from the abuse of corporate power to the crippling or to the abolition of such power by an angry uprising of the people under confiscatory leadership and in a mood for destruction — we have taken up one abuse after another in a remarkably orderly way; and after every exposure and every application of law or of regulation, some abuses have ceased. The moral code and the degree of personal responsibility that rule in personal business affairs come nearer to application to corporate affairs to-day than at any preceding time in our history; and this is an incalculable moral gain, even if it is purchased at a great loss in money and in values.

ABOUT BANKING CHARACTER

IT IS good financial weather to read Mr. Keys's series of articles in this magazine, about "The Money-Kings," for he explains in a consecutive and orderly way the evils that have grown up in the management of many great financial institutions — not of all; for there are banks in New York as elsewhere whose managers have never departed from the old way of doing business, which put safety before all other considerations.

Always bearing gratefully in mind the sound conservative banks which are conducted for legitimate banking purposes only, the reader will see how some of the great financial institutions have developed into vast gambling machines under the names of banks.

This is a scandal as great as the insurance scandal of last year. It has not burst into public notice. There is no danger of the financial insolvency of these institutions. In fact, the great wealth of the larger ones, which practically insures their solvency, is the very basis of the damage they do to our financial character and methods. For their own safety in times of stringency and for speculative uses at all times, they drain money from the channels of legitimate business; and the vast machinery that they control is constituted for these purposes.

We cannot really have the financial character that we pride ourselves on until there are such changes in the banking and currency laws, and such provision for their enforcement as will separate clearly in the public mind financial gambling and promoting institutions from banks properly so-called; and the banks, upon which legitimate business must depend must be kept out of the hands of the men who have developed this new and sweeping and insidious power to control them, as the law is now administered and as prevalent custom permits. There ought not to be such a thing as "a Wall Street bank."

NEW YORK'S NEW BANK SUPERINTENDENT

IT HAS already been decreed that the banking discussion in New York State for the next few years will centre around the question of the management and organization of the trust companies that do business under the state laws.

Therefore, the appointment of Mr. Clark Williams, a trust company vice-president, to be Superintendent of Banks in this state,

seems a wise and timely appointment. Mr. Williams's banking experience began in the midst of the trouble in 1893; it ended on October 23, 1907, in the midst of another outbreak, due largely to bad banking. If any man is qualified by experience to inaugurate the much needed reform of the New York trust companies, it should be Mr. Clark Williams.

The task, it may be said, is a very big one. It is a task that comes very close to the interests of the people. At the outset, Governor Hughes's choice of a practical banker to grasp a practical banking problem meets approval from all sides. The verdict of time is awaited with some confidence.

THE REAL WORK DONE AT THE HAGUE

THE results of the second Hague Conference, obscured by the garbled and imperfect reports which the press dispatches have laid before us, will be a matter for discussion and difference of opinion long after a full and authentic account of the proceedings has been given to the world. The results attained are in many instances so indefinite, the conclusions of the Conference so inconclusive, that time and the further action of the Powers will be needed for their complete interpretation. It is safe to assert, however, that, as the work of the Conference becomes better known, the general feeling of disappointment which has attended its labors will give way to a lively sense of satisfaction. If it has failed to meet the expectations of those ardent spirits to whom the federation of the world is not an aspiration but a programme, it has, on the other hand, furnished solid grounds of encouragement to those whose dreams have not blinded them to the immensity of the task to which the Powers have addressed themselves. "The final fiasco," as the London *Times* describes the last plenary meeting of the Conference, may yet rank as one of the long upward steps of humanity in its progress toward the reign of law in international affairs.

Of the fourteen acts (thirteen "conventions" and one "declaration") adopted with substantial unanimity, which may be described as the positive legislation of this congress of the nations, ten embodied measures for mitigating the horrors of land and naval warfare and for safeguarding the interests of neutrals, while the four others, of far reaching importance, were directly aimed at the avoidance of war. These were the convention providing for the pacific settlement of controversies by diplomatic negotiation, the provision requiring a declaration of war in advance of the outbreak of hostilities, the convention forbidding the use of force to compel the payment of contractual debts of nations before adjudication by the Hague Tribunal, and the convention providing for an international prize court.

That the most important matters which engaged the attention of the Conference did not find a place in this body of legislation may, indeed, be a matter of regret, but should not occasion surprise. It is here — in its treatment of the topics of compulsory arbitration, the creation of an International High Court of Justice, the limitation of armaments, and the project of a stated meeting of the Conference at regular intervals — that we find ourselves in doubt as to the actual results achieved; for upon these points the Conference, unable to reach the unanimity deemed necessary for a "convention," embodied its favorable opinions in declarations of principle of varying weight and uncertain authority. But there is no reason to question the seriousness or the good faith of the Conference in subscribing to them, nor even to deny them a certain authority. They are not merely pious aspirations, but were intended to commit the Powers — and do in fact commit them — to the principles embodied in the declarations. Thus it cannot be doubted that the declaration in favor of the reassembling of the Conference in 1915 will have all the effect of a "convention"; nor that the nations represented will proceed with due diligence to give effect to the declaration regarding the establishment of the International High Court of Justice, which failed of adoption as a convention only because of differences of opinion as to the best method of selecting judges to compose the court.

As to the declarations in favor of a general arbitration treaty and of the limitation of armaments, all that can be said is that the practical difficulties in the way of their speedy realization seem even to the layman to be sufficiently formidable to justify the Conference in hesitating to embody them in legislative acts. And if nothing more shall be heard of them until they are laid before the next conference of the nations, let us comfort ourselves with the truth so finely expressed by John Morley: "Height of aim and nobility of expression are true forces. They grow to be an obligation upon us." In this sense we may

confidently assume that the great conceptions of international duty embodied in those declarations of principle have found a secure place in the international law of the future.

THE ANGLO-RUSSIAN AGREEMENT

THE Anglo-Russian agreement lately concluded between the two great white powers in Asia marks an epoch in the history of that continent. From the Russian point of view it may be regarded as wholly satisfactory. Few students of public affairs in Europe have any delusions about the temporary nature of the peace which has been patched up with Japan, and the ten or twelve years during which this Anglo-Russian agreement is expected to remain valid may now be wholly devoted by the Russians to strengthening their advanced posts in eastern Siberia. So far from the widespread disorder of Russia prohibiting further expansion in Asia, almost the the only hope left for the present Romanoff dynasty lies in a successful war — preferably a successful war of revenge directed against their late conquerors — and of that the doubling of the Siberian railroad track is an unconcealed threat of the most disquieting kind.

By this new agreement with England, the Russians are at liberty to withdraw their troops and their attention from their southern frontier, not only without losing a foot of ground or prestige, but actually with the gain of large and important additions to their spheres of influence. In Tibet, where they previously had no rights at all, their interests are recognized by Great Britain as similar to its own — no small concession, as will be seen by the study of a map of Asia and the position of Tibet. In Afghanistan Russia is secured from molestation, is permitted for the first time to enter into direct communication with the Afghans, and is allowed in certain eventualities to establish a commercial agent even at Kabul. In Persia, the last country affected by the treaty, the gains of Russia are enormous. Without firing a shot, the whole of the north of Persia becomes Russian so far as British rights are concerned, and no one else has the power even to raise the question. All the important towns of Persia fall within the sphere of Russian "interest," with all the fertile and politically important districts; the Caspian Sea becomes a Russian lake and the advanced base of Russia to the south is, for the future, Teheran.

On the other hand, England remains content with a *modus vivendi* that will perhaps outlast the next Russo-Japanese war. Tibet is for the moment neutralized; and English claims to the suzerainty of Afghanistan are admitted, subject to certain facilities to be enjoyed by Russia, as suggested above. In Persia England loses a good deal; and on the face of it it is difficult to see wherein the consideration for the contract is to be found. By the agreement, Great Britain accepts as its sphere in Persia a triangular province of desert, infertile and waterless, not half the size of the territory assigned to Russia and not one-tenth so prosperous.

This would of course be an unimportant matter had the agreement permanently settled the question of English supremacy in the Persian Gulf. But the newly acquired sphere of British influence does not include one yard of the Gulf; and, in response to definite demand from London, St. Petersburg contented itself with a polite assurance that it noted the present interests of England in the Gulf but would prefer to say nothing about their continuance.

The agreement has been received with amazement and dismay by western India, and indeed it is difficult to believe that British diplomacy has not been somewhat seriously overreached. It may be that the ultimate struggle between Russia and England in Asia cannot under any circumstances be avoided. As the Tibetans put it, the two great grind-stones between which their country is to be ground as the grain must perhaps some day meet.

THE UNREST IN INDIA

MEANWHILE another problem of a more immediate and perhaps even of a more disquieting nature is confronting the British in India. There is no doubt that the continual outbreaks in Bengal and elsewhere, small and local though they appear to be at present, are symptoms of a deep-lying unrest with which the English Government will, sooner or later, have to deal. It may not come to a climax this twelvemonth or even during the next five years, but it is practically impossible for the present state of affairs to go on without serious trouble. The more the real situation in India is studied, the more hopeless it seems.

Briefly stated, the difficulty is that England has allowed a certain unwarlike but shrill section of the native population to educate

itself to the point at which the demand for self-government and representative institutions was inevitable, while the remainder of the country is totally unqualified (and, indeed, unwilling) to receive any such measure of Western civilization. The Bengali, who compose the larger part of the educated party, have a certain mental dexterity which enables them to pass the examinations of their universities, and thus to qualify for positions which their lack of grit and character makes it impossible for them to occupy. Their attainments are therefore turned to other and less reputable channels, and they find in the preaching of irresponsible sedition the opportunity for distinction which the Government denies them. Against them there is the mute inertia of southern India and the active hostility of the fighting Mohammedan tribes of the northwest. The latter merely await the day predestined by Allah when a Moslem dynasty shall again rule over India, and when Islam shall be avenged of the many insults it has suffered at the hands of the Hindus.

The Pathans — a name which covers all the many clans and tribes of the frontier — would make an easy conquest of timid Hindustan if the authority of the English were withdrawn. If the end for which the Bengali is clamoring were attained, the first to be swept out of existence or into quasi slavery would be the very men who are now intriguing against their British protectors. As Mr. John Morley said recently, the withdrawal of the present autocratic government from India would be instantly followed by "anarchy and bloody chaos." Yet the over-education of the shiftless *babu* cannot be prevented at this late hour, any more than the education of the sheer fighting men of the northwest can be hastened. There is seven hundred years' difference in book-learning between them; and the Indian Government, riding upon two horses, is becoming painfully aware that the gap is increasing rather than diminishing.

It was said long ago that when one-third of a people were willing to fight to secure their end, and the remaining two-thirds, however much they disliked it, dared not fight to prevent them, the minority must win. Such is the case in India to-day, and the British Government is placed in a position in which the excellence of its past traditions and its present motives is a hindrance rather than a help. The Oriental understands and respects the rule of the sword, and it is proof and part of the ineradicable bumptiousness of Occidental civilization that it has tried and still is trying to introduce the vices of the ballot-box to plain peoples who are constitutionally unable to understand its virtues. The truth is that the present unrest in India is one of the aptest modern illustrations of the fact that political theories which are not based upon rules of national self-preservation well known in the Dark Ages are foredoomed.

SOME PERMANENT BOOKS OF THE YEAR

MR. HENRY CHARLES LEA has closed his great work on the Inquisition of Spain and laid American scholarship under a debt of gratitude for the distinction he has given it by this laborious and monumental task now rounded to fulfilment. This concluding volume brings to completion a work which will rank with the most substantial, the most satisfactory, thorough, and scholarly work which any American has yet done in the field of history. It has been a life work. Twenty years ago Mr. Lea began to publish books on mediæval church history. It has been his field and he has been the chief authority in it ever since. His accomplishment therein makes a career creditable no less to his scientific method and his scholarly exactness than to his strength of character and persistence of aim. It is a piece of work which joins the accuracy of German scholarship, so frequently vaunted, with the native shrewdness, grasp, and commonsense of the American mind.

The task itself was enormous. It has involved the reading and digestion of an enormous amount of unpublished material, of manuscripts, records, letters, documents, charters, lists of accounts, and all the dull and heavy mass of stuff from which history is laboriously made. Mr. Lea has been his own quarryman,

architect, and builder. The result is altogether to his credit. In his method he has been cautious, deliberate, and thorough. Here are no chance or ill-founded generalizations, but proposition after proposition is supported by citation from documents, by abundant fact, instance, and example. To most readers Mr. Lea's conclusions will be of chief interest. The lesson from this minute and exhaustive study of an episode in modern history is that repression means decay; to suppress thought, discussion, and intellectual speculation is to suppress the growth of learning, to dwarf the mental life, to crush literature, and to stop all intellectual development. The weakness of Spain among the nations for the past century and a half Mr. Lea finds to be due in no small measure to the work of the Inquisition in the suppression of Spanish thought and the attempt to crush all Spanish life into one mold. The lesson is simple enough: liberty of speech, liberty of thought, liberty of the press may have their perils, but to check and to suppress can mean nothing but impotence and sure decay.

Looking at Mr. Kipling's work gathered in the new volume of "Collected Verse," we are struck most by its youthfulness, by the air of promise about it — the air of variety, scope, and range. Its youth is in its lack of restraint, its ebullience, its love of the fife and the big drum, which at times grows somewhat insistent. Yet in spite of its robust strenuousness, of which we are occasionally impatient, the achievement it represents is altogether impressive and unique, approached by that of no other living writer. It is not parlor verse, but is "the war-drum of the white man round the world." It will always have a bizarre note, yet it will continue to give, as the verse of no other living writer can, the sense of great space, the effect of having laid the whole round world under tribute, the feeling of star-lit plain and restless sea in every mood, of tawny desert and of crowded streets. It will wake the desire of adventure, of action, the love of valor and loyalty, the mood of wonder, and the zest of life. Though it may seldom stir the deep, quiescent spirit — the "wise passivity" to which Wordsworth ministers — nor the reverent love of beauty which Keats and Shelley nurture with their immortal music, it will retain its appeal to the spirit, an appeal no less valid than theirs.

Professor Duncan's "Chemistry of Commerce" brings us up squarely against the new conditions of commerce. Here is a book on applied science which gathers up the results of the work in the laboratories of Europe and America — work in such widely varying fields as cellulose, glass-making, explosives, therapeutics, illuminating, and perfumery. Not only that; it organizes and directs the mass of knowledge thus derived so as to drive home a proposition of great importance to American business. The proposition is that we must organize if we are to continue to compete in the markets of the world. Professor Duncan shows that the success of German commerce is due to the close alliance between science and business, between the university and the factory. The inference is plain, that we must do likewise if we are to maintain an effective rivalry. It seems clear that the time is at hand when we must give up the present wasteful methods which are characteristic of much American business, cease to rely upon either a protective tariff, however high, or business intrigue, however subtle, and devote ourselves with single minds to succeeding by sheer efficiency. In this Professor Duncan expects the universities to play an important part, and suggests a method.

The chronic state of the Balkans is that of smoldering war. Hence it is difficult to arouse keen interest in the prospect of an outbreak, but the anonymous author of "The Near East" presents a startling state of affairs. He claims to have gathered — in private audiences with almost all the kings, princes, and cabinet ministers of the Balkan States, and with the Sultan of Turkey — such startling new facts that he can only print them without his own name; and this name, his agents declare, is associated with more than a score of successful books, some of which have aroused the admiration of the great modern masters of literature, like Daudet and Zola. It must be confessed that his production comes near justifying this fanfare of trumpets. Whether his prediction of immediate war between Bulgaria and Turkey be verified or not, he has certainly drawn a most impressive picture of the tragic conditions throughout the Balkan Peninsula, while telling all sorts of interesting stories in a light and moving narrative. The most surprising statements are in his summing up:

"All through the Balkan Peninsula the weak are to-day being crushed by the strong. The Austrian Eagle has overshadowed and grasped Bosnia, she

has her talons into Servia, and is casting covetous glances upon gallant little Montenegro. On the other hand, as part of the secret policy of Christian Germany in her advance southward, the poor, defenceless Macedonians are being daily outraged, murdered, or burned alive—the true facts being always suppressed and the news scarcely ever being allowed to leak out—while the Kaiser every day lifts his eyes to Heaven, implores the Divine aid, and consigns the destinies of his Empire to the direction of the Almighty!

"To Germany, in great measure, is the present terrible state of Macedonia due. Her diplomacy at the Sublime Porte has recently exposed, beyond all doubt, that she secretly aids Greece and abets the Greek bands in their nefarious work of outrage, murder, and extermination.

Among the more personal and intimate books of the year is one which strikes deep in its philosophy. "Adventures in Contentment" depicts a man's successful search after happiness in the simple joys of nature and outdoor living. It is an old platitude this, that contentment is to be found in a man's own heart and that he is nearest to success when he gives up the feverish race for the thousand and one luxuries which seem so necessary among the city crowds; but Mr. Grayson tells his story with so much humor and genuine feeling for everything under the open sky that his book has the zest of novelty as well as the impressiveness of truth. Even were it less charming in its appeal, the tale would be notable for the fairness with which this ancient problem is presented; the author does not paint a roseate dream of a sentimental impossibility, but places the real life of this amateur farmer vividly before the reader.

In "Human Bullets" a lieutenant of the Japanese army has laid bare the mystery, if there be one, of the Japanese victory over the Russians. Here is embodied the Japanese spirit. A battle in the open the author finds "the most delightful attack and advance." He describes it with enthusiasm, referring to it again and again as "delightful"; and so eager was he to have part in it that, being detailed to obtain instructions at a distance from the field, he ran, throwing off his clothes to increase his speed, and arrived at camp on his return "perfectly naked, with a pistol in one hand and my sword in the other." That this was typical of the army is plain: from private to general they thirsted for combat and honor and glorious death. When congratulatory messages came from the Emperor and the Empress, the author remarks: "These Imperial messages simply put us to shame and caused us to fear lest we might fail to deserve Their Majesties' boundless love and indulgence." With such a spirit, battle became a lust, a celebration, a semi-religious passion, to which they went in a mad, resistless whirl of fury. Lieutenant Sakurai describes the manner in which he entered the famous "forlorn hope" attack on Wang-tai Hill. "I wore no shoes, only *tabi* on my feet, and my whole appearance was like that of a dancer at a summer festival in Tokyo. I carried with me my sword, my water bottle, and three hard biscuit. Thus armed and attired, I was to appear on the glorious stage of death." And this was no rhetoric. The men who entered that forlorn hope were "required not to fail to die." They were "sure death" men, which "appellation," Lieutenant Sakurai says, "gave us a great stimulus." How just it was appears in the event. Of all the officers but two survived, and these terribly wounded. The author, "left lying alone, surrounded by dead and dying," repeated to himself Nelson's words, "Thank heaven I have done my duty." A nation imbued with such a spirit is not easily to be conquered.

Carl Schurz's "Reminiscences," beginning with his German childhood and covering the period of his education and youthful revolutionary activity, come down, of course, through his most varied and interesting long career in American public life. No such man's life could have fallen in a more interesting period; and there are few such books that make a more genuine contribution to history. Still fewer are as interesting; for he had the quality of being interesting to a most remarkable degree. From the time that he landed, an ardent lover of political freedom, till he died last year, he spent no dull nor idle year. He knew everybody; he took a part in every public question and controversy; he sparkled and talked and wrote for an active half-century, during which the country had no better American than this German-born citizen. He has left us one of the most important as well as the most interesting books of the year, because it is the record of a great career heroically lived. If his mind and his work were critical rather than constructive, that very quality makes his "Reminiscences" all the more interesting. And the book is as important as it is entertaining.

THE MAN WHO CAN TAKE CHANCES

A GREAT many queries reach THE WORLD'S WORK from people who desire to invest their money in stocks or bonds which are fairly secure yet which have in large degree the element of possible profit. These people do not want to buy any stocks or bonds that are mere speculations. They do not want to buy on margin. What they desire is a security that yields high revenue in dividends or interest and that can be bought with a fair assumption that in time it may be sold at a good profit on the principal.

This magazine gives advice to such investors, but always with the understanding that no man's judgment is immune from the possibilities of mistake. It is utterly impossible to recommend stocks or cheap bonds that yield high revenue, without taking into account the fact that some catastrophe may arise which will, for a time at least, make the purchase show a loss rather than a profit. People who are likely to become panic-stricken should not buy anything but the strongest kinds of stocks and bonds.

This article, therefore, is addressed not to the man who, by hard labor and perseverance, has amassed a small fortune in the savings banks and seeks an absolutely safe investment for that fortune; nor yet to the woman seeking an investment for the money left, perhaps, from a life-insurance policy; nor yet to the "average investor," a timid man, unversed in financial matters.

It is intended rather for that larger class which seeks investment for its surplus, for unnecessary funds that lie in bank. The lawyer, the young doctor of large practice, the merchant, the editor, the salaried business expert, all these and a thousand other classes of men have revenues for investment in a business way. None of them is compelled to live upon the proceeds of the investment. Most of them want the investment to grow.

To these people, to-day is probably the day of opportunity. Conditions have brought it about that the bonds and stocks of the class especially adapted to their needs sold, in the autumn, at prices far below their intrinsic value. It is not at all unlikely that, in a lesser degree, the same conditions will obtain throughout the next few months. It is time, then, for the investor of this class carefully to consider the matter of investment.

The general principles upon which such investment should be based are as follows:

Buy only at a time when the general market is unduly depressed; buy only such securities as have fallen in price for reasons well understood, and such as can be studied from authentic reports; do not strain yourself to buy more than you can afford; and buy only for cash, and pay in full at the time of purchase.

Coming down to details, the choice of bonds and stocks is very wide. In bonds, the list includes the junior bonds of such railroads as the Rock Island, the Union Pacific, the Chesapeake & Ohio, the Missouri Pacific. Few good opportunities of this nature will be found in the bonds of the great trunk lines, such as the Pennsylvania, the New York Central, or even the Baltimore & Ohio; nor in the bonds of the most solid "grangers," such as the Northwestern, the Burlington, or the Great Northern. The bonds of these roads are suitable for conservative investors, seeking stability rather than profitable purchases and ultimate sales. The list will also cover a multitude of industrial bonds. These must be selected with the most assiduous care, for many of them are not safe, even for the business-like buyer.

Let us take one bond and consider it, not because it is by any means the best in the class, but merely as an example. Suppose, being anxious to make a purchase for large interest and ultimate profit, you note that the Chicago, Rock Island & Pacific collateral trust 4 per cent. bonds are selling at 64. You think they are, perhaps, cheap. Before you make a purchase of them, you should ask many questions. Some of the questions and the answers in this case are as follows:

Q. Why are these bonds selling so low?

A. It is due to the general market conditions. There is no especial weakness about the Rock Island to-day.

Q. What is the market record of these bonds?

A. They were listed in November, 1902, and sold at that time at about 86; they declined to 66 in the bad market of 1903-04; they rallied to 90 in 1905; and they sold at 77 early in the current year.

Q. Is the interest well secured?

A. The report for 1907 shows a surplus of $4,450,000 after paying all the fixed charges of the C., R. I. & P. Railroad, which amount to about $3,700,000. The report seems to indicate that the road was well kept up.

Q. If the company should default, what would I get?

A. The bonds are secured on $1,000 of [illegible] stock of the old Rock Island for each $[illegible] bonds. That is the ultimate security.

Q. What kind of a market is there for them?

A. They can be bought and sold at any [illegible] New York Stock Exchange.

[illegible] questions cover the main points. If [illegible] inquiring turn of mind, it is [illegible] of the last annual report [illegible] broker will get it for you [illegible] In all probability he will [illegible] a copy of the mortgage if you [illegible] you are accustomed to reading [illegible] however, it will do you little [illegible] railroad mortgage is not a simple [illegible] You will usually find that [illegible] report will give you most of the [illegible] you want about the property, [illegible] its directors, its officers, its plans, [illegible] its troubles. Popular opinion [illegible] notwithstanding, an annual [illegible] frequently very interesting, even to [illegible]

[illegible] up, in respect to this particular [illegible] you will come to this conclusion:

The bond is fairly safe for its interest; it [illegible] on stock that has for thirty years had [illegible] value and that represents a good road [illegible] the Middle West, and one that seems to have fair prospects for a prosperous future. The price to-day is lower than it has ever been [illegible] to this year. The last time it had a [illegible] point decline, in 1903, it rose twenty-four points when conditions righted themselves. The probabilities are that it will do so again.

The same test should be applied to every bond that is recommended to you, or that your own fancy selects as suitable for such investment. You will be astonished to find how easy it is to get the information you want. So far as the listed bonds are concerned, any reputable banker to whom you apply, whether he ever heard of you before or not, will send you all the facts for which you may be disposed to ask. There is no need to buy blindly any railroad bond or stock listed on the Stock Exchange.

So much cannot be said for the industrial bonds or stocks. Very few of these companies publish reports that one may readily understand. So generally is this true that the safest guide in buying such bonds or stocks is the word of a well-informed banker, in whom you have confidence. If you write to such a banking house, asking for real information about an industrial bond, your query will not be looked up by the head of the house. It will be turned over to the "statistical department," and handled by a clerk whose business in life it is to study such things, and not to be misled by glowing prospectuses and annual reports that tell only a part of the truth. Even then you may be badly misguided. It is a part of the risk that attends the purchase of industrials.

This does not mean that industrials are necessarily more dangerous than railroads. If a man had gone into Wall Street in October and bought bonds that come ahead of the stocks of such companies as the American Telephone & Telegraph, the General Electric Company, the Western Union Company, or even the American Tobacco Company, he might have done so without much consideration, feeling confident that in the long run he could not lose. Still, it is not a process that one would care to recommend to any man except the man who can buy blocks of a great many various bonds, for it might happen that the man who bought only one bond would pick out a company that will encounter dire trouble within the next two years. A month before the Westinghouse Electric & Manufacturing Company went into the hands of receivers, even the best informed Wall Street bankers, closely in touch with the affairs of that company, were recommending the bonds and notes of this company as perfectly safe. In the long run they probably are, but even the business investor does not care for "temporary receiverships" along with his bonds.

Stocks may be bought with discrimination for the same kind of investment. In nine cases out of ten, this magazine will recommend such issues as Union Pacific preferred, Southern Pacific preferred, Baltimore and Ohio preferred more readily than it will select the cheaper

bonds. Such issues as Pennsylvania, New York Central, Great Northern preferred, and Chicago and Northwestern are excellent for this kind of investment. Two years ago, they belonged in a limited category called "rich men's stocks," and the average banker in Wall Street picked them out for his "hundred-thousand-dollar client." This autumn they were wisely bought in huge quantities by the people who have only a few hundred dollars to spend, and who want to spend it safely and wisely.

Without specifying any particular stocks, and without venturing a prediction that all or any one of these stocks may not be bought cheaper during the coming year than they can be bought when this is written, it may be stated that this class of stocks is cheap to-day. Any business man who buys them will probably spend a comfortable year, so far as his investments are concerned.

The stocks lower down in the investment scale are not so desirable. Even the best of the industrials are rather dangerous, though the ultimate values may be certain. Less than twelve months ago, the Westinghouse stock sold at 154 per share. In October one sale was made as low as 35. General Electric, which sold near to 170 early in the year, dropped to 89½. When such things are going on in the manufacturing world, the average man will be extremely cautious. Yet the trustee of one estate bought all the General Electric stock he could get at the time of the panic, and intends to hold it through thick and thin. Another buyer of the same class watched the market all through the panic, looking for a chance to "pick up" National Biscuit preferred stock. During an entire week of the panic in October he succeeded in getting only one hundred shares. A buyer who had decided to purchase American Smelting & Refining preferred fared better, getting his 2,000 shares below 85. These men were, however, no ordinary investors.

In closing this article, the financial editor desires to reiterate the statement that investment along the line here outlined is not recommended to any but men or women that are fit and prepared to take the usual risks of business. If it inspires in the mind of any saver of money, of any trustee, of any man or woman who must live on the income of his or her investments, the desire to risk such purchases, then it fails of its object. That object is to satisfy, so far as possible, the demand for information with regard to the making of investments by business people at the present time in the Wall Street market.

THE BEST OF ALL CHRISTMAS PLANS

BY

JACOB A. RIIS

THE question "What is the best practical Christmas work to help or to uplift mankind?" has never had any other answer to me than this: Be brother and neighbor. All our troubles, all the thousand misfits that burden our world, come about through forgetting that in truth we *are* brothers, being children of one God, by whatever name we were taught to call upon Him. All the specifics, the cure-alls, that are offered for our social ills, each warranted to make a brand new race out of the same old faulty material, are human efforts, honest for the most part, to find a human substitute for the prescription that we "love one another." They will all alike fail, because they *are* substitutes, "something just as good" in the belief of their champions. There is nothing just as good.

Therefore, my scheme for Christmas charity is to be neighborly; to cry quits on all fights and quarrels as the Holy Eve draws near; not only to forgive your enemies — that is easy — but to square yourself with yourself and own when you did the wrong.

That first — sweep before your own door. Then out to the neighbor to find him. He is somewhere around; and the harder he is to find, the more the blame for your letting him get so far away, out of your sight. My plan is ever for each one to find his own neighbor. If he can find two, three, or a dozen, so much the better; but the thing is that *he* must find

them, or go to them anyway. So only does he fill the Christmas ideal. Doing good by squads is better than nothing; but the one who does it misses the Christmas feeling of it for himself — the glow that comes of seeking and finding your brother and owning him as such.

Don't you see that if every family in the land that has would take by the hand one family that has not, in the Christmas season, the *Other Half* would be cared for in full by the half that owes the care? And, what is more, once having taken the neighbor by the hand under the Christmas impulse, we shall find it mighty hard to let go. And so Christmas charity which no one needs be afraid of — it never corrupts because of the love that inspires it — shall be transmuted in the days after into neighborly helpfulness that goes alongside the needy one, the weak one, the erring one, with counsel and advice and friendship. And then we shall be home pretty soon.

Now, that is the long and the short of it, and it is really what we are all aiming at with our abundant Christmas benevolence. Only we fall into the error, through indolence, of farming out the loving impulse; and then it spoils — the divine breath upon it is gone.

Let every man, every woman, go look for his, for her, own neighbor right now, whether he lives in a tenement slum, or in a cold hall-room with no Yuletide cheer in it. Perhaps he works in your shop, your store, and you see him every day without knowing the least thing about his life, though in very truth he is your neighbor. Find out, then, and you shall have found not only your brother, but the true and only Christmas joy here on earth. The bells on Christmas morning will ring for you as they never rang since you were a child and heard the angels' words in them.

TRANSATLANTIC MARCONIGRAMS NOW AND HEREAFTER

ON THE morning of October 18, 1907, a young man sat at a telegraph key in a lonely station at Glace Bay, Nova Scotia, and "talked" to Clifden, Ireland, not by a cable under the ocean, but through the air, as a man might talk with his friends across an alley. That marked the beginning of a new era in communication. Perhaps it will be regarded as an economic event as great as the opening of the first cable. At any rate, even though the wireless should not soon become a commercial competitor of the cable, to-day we must regard it as another link to bind the Old World to the New.

The mere wireless bridging of the Atlantic is no new thing. The new thing is the opening of a wireless "line" to the business of the world, the statement that some press messages will be accepted for transmission at the rate of five cents per word, and the sending of 10,000 words in one day at that rate. These things made the transatlantic wireless a servant of commerce.

The romance of this new marvel culminated on December 12, 1901, six years ago. On that day Mr. Marconi sat at a little flat table in an old barracks on Signal Hill, Newfoundland. He held a telephone receiver to his ear and listened. The wire ran out to another wire that ran from the earth to a kite flying four hundred feet in air. The man at the receiver was quiet, contained, placid. For many minutes he sat unmoved; then a smile crossed his face. He handed the receiver to his assistant:

"See if you can hear anything, Mr. Kemp!" he asked.

The other man took the receiver and listened, while Mr. Marconi watched him closely. Suddenly a faint sound, like a distant echo, came over the wire. It might have been merely an accident, the flight of an insect against the suspended wire, or some little atmospheric disturbance. But it came again, still faint, but clear — the three dots that in the Morse code make the letter S. The thing was done.

A year later, December 16, 1902, the first long message was sent from the station at Glace Bay to the station in Great Britain, addressed to the London *Times*, from its own correspondent on the ground. Many other messages followed. In January, 1903, the station at Cape Cod sent greetings from

President Roosevelt to the King of England. From time to time, from that day to this, brief messages have been sent across. The inventor has been hard at work, seeking to overcome the troubles of his mechanism, seeking to make this scientific marvel an every-day commercial machine.

These difficulties were immense. The obvious troubles, to the lay mind, were: first, that the wireless message, once launched, seemed to belong to all the world; second, that the spark needed to make the transmission was so enormously powerful that the plant was shaken, wrecked, and ruined by a few hours' service. These things had to be overcome.

The second difficulty has been overcome in large part by the invention of a system of generation that, to all intents, makes the current little more difficult to handle than the current used in the wire cable. The first difficulty is not yet fully overcome, and it may be doubted whether it will be so fully surmounted as to make the wireless message absolutely private. Of course that can be done by a private code. To-day the messages are "tuned" so that only receiving instruments adapted ed to the "tune" can hear them—but that is only a partial safeguard. If the instruments became very numerous, chance interceptions would surely occur in great numbers. This is, in all probability, the yet unsolved problem of the wireless.

But the system *is* now a commercial machine. The first message sent to England on October 18th was from Sir Wilfred Laurier, and was addressed to the London *Standard*. British greetings came back. Then the line was formally declared open for press business, and 10,000 words of press dispatches came back and went forth that day. The charge was five cents a word, with telegraph tolls on land added, making a rate of about eight cents a word from New York to London. These are what are called "press rates." When the world at large can use the line — not to-day nor, perhaps, this year — the rate will be at least double that amount. Meantime, the transatlantic wireless is the servant of the newspapers. Mr. Thomas Edison's judgment of the commercial future of the Marconi transatlantic messages is as follows: "Give Marconi ten years and he will be sending 1,000 words a minute by wireless. He won't need any duplex system to do it, either. Marconi is the man."

And Marconi *is* the man. This Irish-Italian, young, enthusiastic, practical, has brought together and made practical the theories and the experiments of all the great scientists who in their day tried to solve the problem of the transmission of sounds or messages without wires. He did not invent wireless. More than sixty years ago Morse sent a message under the Susquehanna River without the aid of wires. Hertz discovered the principle upon which Marconi built his system. Faraday, Lodge, Preece, Maxwell — a dozen others of the great physicists and inventors — all experimented with the science of wireless transmission before young Marconi paid his epoch-making visit to Sir William Preece, and asked the backing of the British Telegraph Department in solving the puzzle.

The vertical wire — one end earthed, the other suspended far above the world — was, they say, invented by another man. Professor Dolbear, of Tufts College, is the American claimant of that honor. Germany, too, has other claimants. The little "coherer," the thing that made the records in the successful experiments of Marconi, was perfected by Branly, of the Catholic University of Paris. Little, indeed, seems the part that was left to Marconi, yet "Marconi is the man."

He was born in Italy, April 25, 1874, and grew up on his father's estate — no extraordinary child. His education was gained at the Italian schools and universities. It was early in 1896 that the assistance given to him by Sir William Preece, head of the British telegraphs, enabled him to bring to a successful conclusion his long experiments in wireless. In May of that year he took out his first British patent. In June, 1897, he succeeded in sending a message nine miles. In July, he reached twelve miles. In the next year, the distance grew to thirty-two miles. It was not until January 23, 1901, that he sent his waves 189 miles, from the Lizard to St. Catharine's, on the Isle of Wight. The success of that message demonstrated to the world the claim of Marconi that the waves of sound would not be intercepted by the curve of the earth, and opened the way for the larger experiments that have culminated, at last. in the message across the Atlantic.

The young inventor has been assailed in a thousand ways. Rivals have sprung up, entering the field that he had marked for his own. Failure has more than once grinned through the window of his laboratory. Funds have

run short. Disrepute has dogged the steps of every effort made to capitalize his invention. The stocks of his companies have been made speculative footballs for gamblers and sharpers. The very word "wireless" brings a smile to the lips of the Wall Street man. Widows and orphans, poor men and parsons, all looked alike to the wireless fishermen who spread their nets for the American public. Thousands of men and women in this country have already learned to curse the day Marconi made his first experiment.

On this point, it is well to dwell for a moment in passing. The success of the transmission of commercial messages across the Atlantic will probably lead to a revival of interest in these deserted stocks in the purlieus of the Wall Street market. It is, therefore, as well to say that wireless stocks, at large, are to be regarded by the public as little better than race-track gambling. Most of these wireless telegraph stocks have been put through a long period of juggling, washing, manipulation, fraud, and malfeasance that should effectually remove them, for good and all, from the field of investment. The time may come when the wireless will become suitable for consideration by investors. It will not come until some strong, clean, honest financial interests take charge and utterly eliminate the miserable, fraudulent, unwholesome methods that have marked the whole market history of these issues.

But to come back to the discovery itself. During the last five years, the system of wireless telegraphy has been fairly well tested. It is not, however, wholly beyond the experimental stage yet. It is true that the British navy is equipped with it. It is also true that almost all the larger passenger liners that sail the seas report their progress by wireless as they go. The American navy and others are not far behind the British. Almost every day one may read in the New York papers a list of reports from ships at sea, giving the distance from port, the character of the weather encountered and other items of importance. The business man of to-day may travel across the ocean, keeping close watch upon his affairs. On some of the larger ships, the wireless reports every day the startling news of the world ashore, and daily bulletins are published for the wayfarers.

And yet, surely the first ten years of its use have given us but an inkling — no more — of the possibilities that lie in this invention. Hardly a month passes that some new phase or form of it does not crop up. Here, in November, we hear that the British navy has given to the Radio Telegraph Company the contract for equipping some of the ships with a new wireless telephone, which makes it possible to talk from ship to ship for a distance of thirty miles or more. At the same time, wireless telephones on land have passed beyond the gossip stage, and are in actual operation in and about New York, though not yet in the hands of the public nor likely to be for many a day. But the feat has been done.

In considering the subject from a commercial point of view, one naturally turns to the cable companies. These great monopolistic concerns profess no uneasiness about the possible or contingent rivalry of the wireless across the ocean, nor, indeed, on land. The mere sending of twelve, or twenty, or even thirty words a minute by the transatlantic route is not a thing that alarms a corporation equipped and ready to send thousands of words a minute. Yet the cable companies are watching the developments with much more than passing interest. When Mr. Marconi first sent a message across the ocean, six years ago, the Anglo-American Cable Company brought a suit to enjoin him. To-day there are no suits. Instead, there is careful watching — plotting, it may be, to get possession of his patents when the time shall come. Openly the cable companies claim that the communication between the shores and the ships at sea, the most notable and characteristic of the Marconi accomplishments, makes the wireless a supplement to the cable, not an opponent.

Of course, if the wireless transatlantic is ever going to be a real rival of the cables, the prophesy of Mr. Edison will have to be more than fulfilled. If it takes ten years to reach a final capacity of 1,000 words a minute, the wireless will never really injure the cable business at all. For new cables must be laid to-day because the old ones are overcrowded. Moreover, the Western Union and the Commercial Postal Telegraph Companies work in close coöperation with the cables. The wireless, on the other hand, has far to go before it has the land covered as these have. The system is, in fact, in its infancy. What it will be when it gets its growth is one of the interesting questions of the day, not only in scientific but also in commercial circles.

AMERICAN PHYSICIANS TOURING FAR-AWAY VILLAGES

CROSSING A FLOODED FLAT IN KOREA

Presb. Bd.

TRAVELING IN THE MADEIRA ISLES

M. E. Bd.

MERICAN HEALING AROUND THE WORLD

HE MISSIONARY PHYSICIAN'S MINISTRY TO HUMAN SUFFERING IN ALL LANDS

BY

EDGAR ALLEN FORBES

at Christmas time, we ask the man who has seen all that is worth seeing in the world what is the most beneficent that he has witnessed in any quarter of rth, he will probably name the work of en and women who carry the gospel of r and Pasteur and anesthesia. If he shall faced the onsweep of a pestilence or d beside a child whose throat was fast with a diphtheritic membrane, the work ducator, the engineer, the philanthropist, the minister himself, will have shrunk into the commonplace beside the work of the physician. We are entitled to our individual estimates of the usefulness of the man who goes abroad with the Bible and hymn-book, but there can be little difference of opinion regarding the man or woman who carries his gospel in a surgical case, whose chapel is a thatched dispensary in an out-of-the-way place in the world. The doctor who goes a hundred or a thousand miles beyond the most distant hospital and practises his profession among an alien race — at a salary equal to that of a bookkeeper —

Presb. Bd.

RS. McKEAN AND McGILVAY IN LAOS

M. E. Bd.

THE KOREAN "DOCTOR'S BUGGY"

AMERICAN PHYSICIANS STARTING ON THEIR ROUNDS OF MERCY

certainly need envy no other man in any part of the world his opportunities for doing good.

MEDICAL OUTPOSTS IN FAR-AWAY LANDS

You may journey from the Golden Gate to Stevenson's grave in the South Seas, wind your northward way through the Pacific islands to Canton and Shanghai, take the overland trail across Asia to Constantinople or swing south to Bangkok and westward to Suez; then you may circumnavigate the Dark Continent or cross it from Cairo to Capetown and from Sierra Leone to Khartum — and in all these months and months of travel you will never be far from the American missionary physician. His diploma is from one or another of the best medical colleges in the United States and his experience has been gained in a practice probably larger than that of any professor that taught him.

These countrymen of ours are in the torrid belt of Africa and at Point Barrow, 400 miles within the Arctic Circle, where mail is delivered once a year. Their hospitals are in the New Hebrides and among the fisher-folk of Labrador, a thousand miles north of the Gulf of St. Lawrence. They are administering chloroform in Jerusalem and Damascus and Tyre, vaccinating in Peking and Singapore and on the road to Mandalay, giving quinine in the malarial forests of the Zambesi, the Congo, and the Niger. They are on the slopes of the Andes and high up in the Himalayas, "the roof of the world." There is a medical station at Harpoot, near the headwaters of the Tigris and the Euphrates, and these are the instructions how to get there: "Cross the Bosphorus from Constantinople to Scutari and take the train to Angora, going thence for three weeks by caravan."

M. E. Bd

CROSSING A FORD IN SOUTH AFRICA, HOMEWARD BOUND

Instead of the familiar "doctor's buggy," these physicians make their calls in canoes, jinrikishas, palanquins, sledges, wheelbarrows, and hammocks; they tour the villages of their districts by boat, on elephants and camels, and afoot. They have no Waldorf-Astoria suites, but lodge in such inns as this: "A small room without windows and with no furniture except three beds. These were planks covered

with dirty mats upon which coolies had smoked opium for years. A pith-wick in a saucer of peanut-oil was the only light. The floor was black earth, the walls were besmeared and mouldy, everywhere were vermin. The odor of opium-smoking and of pigs wallowing at the door pervaded the room." Their dispensary prescriptions are written in characters so strange that no American druggist could fill them, and their instructions to nurses are spoken in tongues not learned at their mothers' knees.

MAKING A TOUR OF THE OUT-STATIONS M. E. Bd.

Dr. J. C. Hartzell, Methodist Bishop for Africa, at an outpost of civilization

Men tell us that this is the Commercial Age, that our race is money-mad, that in his swift pursuit of wealth the American takes not time to eat, to think, to pray, to help. And this is our reply:

THE HEALING WORK OF A SINGLE YEAR

Of this widely scattered staff of physicians, comprising several hundred men and women, more than half are from the United States and only a very small fraction have gone from other than Anglo-Saxon lands. The great majority of them are supported by the four aggressive denominations — the Presbyterians, the Baptists, the Methodists, and the Congregationalists. The foreign medical staff of the Presbyterians numbers about a hundred, nearly half of them being women. Their hospitals are in China, Korea, India, Siam, Persia, the Turkish provinces, and West Africa. This force last year treated nearly half a million patients in these lands, practically all of them with no other hope of sympathetic and scientific treatment. The Congregationalists (The American Board), with a staff about half as large, ministered to nearly 350,000 sick people. The cost of this humane work averaged about $1,400 for each physician, including salary, assistants, supplies, and traveling expenses. They have thirteen hospitals exclusively for women and three for lepers. The Baptists and the Methodists, with foreign medical staffs about as large, accomplished a work proportionately large and important. The individual reports from many of these hospitals, though condensed into a few sentences, tell a story that makes one feel that the age and the race have

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FAMINE RELIEF WORK IN INDIA

not gone wrong. Here are a few, in fragmentary form:

Several hospitals reported an average of more than three operations a day throughout the year. One — in the capital of Persia — had 83 cataract operations, which means that the boon of eyesight was restored to that many persons in Teheran alone during a twelve-month.

At Ping-tu, China, in a little hospital room eight feet wide and twelve feet long, a Southern Baptist physician treated an average of more than twenty patients a day — 7,000 for the year — although his native assistant had died. The contributions from the patients — averaging fourteen cents Mexican — made the hospital self-supporting.

A Presbyterian physician in the province of Shantung, China, describes an emergency which would tax the skill of any hospital surgeon. A man with a large knife had run amuck, and four victims were brought to the little hospital. One had the bones of his forearm and wrist cut through, another had scalp wounds that aggregated eighteen inches in length, a third had his skull cut clear through, a fourth was so injured that parts of his skull had to be removed. The report ends modestly: "All made good recovery."

The half-a-dozen United Presbyterian physicians along the Nile had a busy year in 144 villages, aside from their chief stations. One clinic alone had patients from fifty different towns — peasants and mosque teachers and green-turbaned sheiks.

The reports of last year are full of hospital building and extension, the doctor usually being the chief carpenter. One in North

Presb. Ed.

AN AMERICAN DOCTOR'S OUTFIT ON THE ROAD TO HIS NORTH CHINA STATION

Presb. Bd.
A DISPENSARY IN THE GABOON REGION

Presb. Bd.
SEVEN HUNDRED MILES NORTH OF BANGKOK

Presb. Bd.
THE PRESBYTERIAN HOSPITAL, PYENG-YANG, KOREA

A. B. M. U.
BAPTIST HOSPITAL BUILDINGS, SOUTH INDIA

Presb. Bd.
A TRAVELING DISPENSARY IN SYRIA

A. B. C. F. M.
THE HOSPITAL AT CÆSAREA, TURKEY

Presb. Bd.
NEAR THE EQUATOR, WEST AFRICA

A. B. M. U.
AMERICAN BAPTIST HOSPITAL, SING-IN, CHINA

AMERICAN HOSPITALS AROUND THE WORLD

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A HOSPITAL FOR CHINESE WOMEN AND CHILDREN

The David Gregg Hospital (Presbyterian) at Canton, China

A. B. M. U.

A DAILY SCENE AT BANZA MANTEKE

China treated 600 patients a month while putting up his hospital. Another (in Siam), whose hospital was completed during the year, secured the brick from Siam, the lumber from the teak forests of Laos, the cement from Copenhagen, the roofing from Singapore, the ceilings and paint from London, and the hardware from New York.

Report after report from hospitals in the Far East tells how the work of healing went forward in the midst of fearful outbreaks of cholera and smallpox. Not a physician nor a nurse deserted and none died from the plague. Native cholera corps and vaccinators were organized by the American physicians and authorized by the governments to fight the epidemics. Dr. Langheim, of the Presbyterian mission to the Philippines, had charge of a corps in the island of Negros that vaccinated 45,000 persons by government authority.

THE RECLAMATION OF HUMAN OUTCASTS

Along with the routine work of healing, brief mention should be made of other kinds of humane work that these men and women are doing. The Kerr Hospital for the Insane, at Canton, with 150 new patients last year, is a form of beneficence that is wholly new east of Suez. The institutions for the blind and for the leprous are also parts of the medical work. Up in the Himalayas, to give a single instance, is a group of nearly a hundred lepers whom a young Methodist woman has gathered together. Not long ago a schoolgirl friend from Ohio made a long detour to visit her. She found that the young lady had herself become a leper. The visiting friend was served in separate dishes and lodged in an isolated guest-tent. This is one of the world's most pathetic examples of heroism.

In China, India, and other Oriental lands,

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AN AMERICAN PHYSICIAN (Dr. Mabie) AND HER "BABY CLINIC" ON THE CONGO

A SURGICAL DEMONSTRATION IN TEHERAN, PERSIA
These students are now graduate physicians

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AT WORK IN KOREA WITH NATIVE ASSISTANTS

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the rescue of opium victims calls for most patient work. In the city of Chengchow, which is the centre of overland traffic between Canton and Hankow, it is estimated that four-fifths of the male population above sixteen years of age have acquired the opium habit, and there is no native treatment that will relieve them of its thraldom. Many of the hospitals in other Chinese cities have special opium wards. At the An Ting hospital, Peking, three of the nurses are reclaimed opium victims. At one station in the Federated Malay States where a new remedy was discovered last year, there were 30,000 applicants within two months. As a result, the Government sales of opium fell off $43,000.

A. B. M. U

NATIVES IN CHARGE OF A DISPENSARY, HANYANG, CHINA

Woman's work for woman nowhere comes with a gentler grace than in these lands where the wives and daughters of the upper class are kept within four walls and where women in general often receive less consideration than domestic animals. No matter how ill they may be, it is rarely that male physicians are permitted to relieve their sufferings. One doctor who was called to a Mohammedan home insisted upon the necessity of counting a sick woman's pulse; the lord of the household went upstairs, tied a cord to the woman's wrist, and brought the other end of the string down to the

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AN AMERICAN MEDICAL COLLEGE IN SYRIA

One of the Departments of the Protestant College at Beirut

THE MEDICAL CLASS OF CANTON SEMINARY

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DR. STUART AND THE MEDICAL GRADUATES (1905) OF NANKING UNIVERSITY

M. E. Bd.

THE LEADERS OF A NEW SANITARY ERA IN CHINA

physician. Hence the need of women physicians and of such institutions as the Hodge Memorial Hospital, of Paoting-fu, North China, where eighty women patients a day were treated last year.

THE APPEAL OF THE HOPELESS SICK

It should be remembered that there is nothing approximating medical science in the countries where these hospitals and physicians are at work. It is true that China is full of native "doctors," wearing huge spectacles, but their "remedies" are infinitely worse than any disease. These medicine men proceed on the theory that the human body is composed of fire, earth, iron, and water; that there are five tubes leading to the stomach; that the heart has seven openings. They have never learned differently, because none dared to take a human body to pieces. Diseases in the spring are thought to come from the liver, those of summer from the heart, and so on. A universal panacea is the insertion of long needles under the skin; sometimes the needles are heated. One man with failing eyesight consulted an "oculist"; the "oculist" pierced each eyeball with a needle to let the light in.

A CHINESE DOCTOR'S COUGH REMEDY
Thirteen drugs for one patient, to be mixed in one prescription

Toothache is, of course, prevalent everywhere; as opium is the chief Oriental remedy, its use frequently enchains the sufferer to the habit. It was explained to the late Dr. Mackay,

S. B. C. Bd.

THE NUCLEUS OF A CHINESE MEDICAL SOCIETY
Dr. T. W. Ayers, of the Southern Baptists, and his students

Pres. Bd.
A KOREAN MEDICAL STUDENT IN AN EMERGENCY CASE

of Formosa, that toothache is caused by the gnawing of a black worm at the roots; the logical remedy, therefore, is to hit the tooth sufficiently hard to kill the worm. In one year this physician extracted more than 21,000 teeth.

Equally absurd theories prevail in the neighboring countries, even among the higher classes. A wounded Korean prince was treated by a dozen court doctors; an American was then hurriedly summoned and he found that his colleagues had poured molten wax into the wounds to stop the hemorrhage. A native physician of Bangkok, who had become the possessor of a hypodermic syringe, was visited by a man whose joints were stiffened by inflammatory rheumatism. The doctor injected oil into all the joints, on the theory that what was good for a rusty hinge should loosen up a stiff joint. The result was unexpectedly disastrous.

Along with the terrors of the native doctor comes the heartlessness of relatives and friends. In China and elsewhere there is a superstitious fear that if any one dies in bed his ghost will haunt the house. The dangerously ill are therefore placed on the floor, while deafening gongs are beaten to drive away the spirits of evil. The sanitary conditions that surround the sick may be inferred from the question asked by a patient brought last year to the Junkin Memorial Hospital in Fusan, Korea. He had been a helpless invalid for twenty-six years, during which time the cleansing virtue of water

M. E. Bd.
A NATIVE GRADUATE PHYSICIAN, WITH HIS ASSISTANTS AND A GROUP OF PATIENTS

Presb. Bd

THE SMALLPOX FIGHTERS OF A LAOS HOSPITAL
Many of these vaccinators are preparing to become physicians

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DR. WELLS AND HIS CHOLERA CORPS, PYENG-YANG, KOREA
Every man is many times a hero

Presb. bd.

DR. JOHN G. KERR, OF CANTON, CHINA, ON HIS GOLDEN JUBILEE

A distinguished Presbyterian surgeon, with a remarkable career of usefulness

had been forgotten. While waiting in the reception room, he overheard a description of a place called heaven, which left upon his mind the vague impression of some peaceful place of rest. He was given a bath and clean linen and placed on a cot. As his head sank into the first pillow that he had ever seen, he turned his wondering eyes to the nurse. "Is this heaven?" he asked.

The distress among the afflicted is also shown by a comparison of the supply of physicians there and here. In North America, there is an average of one doctor for every 625 people; in China the proportion is one to about

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A PARSEE TRAINED NURSE

2,500,000. When Dr. F. Howard Taylor went to the province of Ho-nan, he was the only scientific physician south of the Yellow River, among 20 millions of Chinese.

TRAINING A NATIVE MEDICAL FORCE

One of the most interesting experiments which these physicians have made is that of training natives to extend the work of healing. Every one of these little hospitals and dispensaries, from Banza Manteke to the China Sea, is a medical college in miniature. Young men are being trained in the drug-room and to assist in operations; the young women are

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A CORPS OF JAPANESE NURSES BEFORE THE RED CROSS WAS HEARD OF IN JAPAN

given practical instruction in nursing. When their courses are finished, they may either work on the station or accept employment outside.

In Canton, Peking, Beirut, Constantinople, and other large cities, these humble beginnings have already grown into well-equipped schools of medicine. The Union Medical College of Peking has a faculty of twenty-one instructors, with a five years' course of study.

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DR. MARY K. EDDY, OF BEIRUT, SYRIA

All the teaching is in the Chinese language and there were thirty-nine students last season. The translation of Gray's Anatomy into Chinese for the benefit of these students was an achievement in itself. Canton Hospital had thirty-six medical students, and the Hackett Medical College for Women, in the same city, this year conferred the degree of Doctor of Medicine upon seven Chinese young ladies.

In Constantinople, a New York surgeon — Dr. Carrington — is perfecting the plans for a training school for nurses that will do more for the decadent empire than the Government has ever done. A new hospital, of which the training school will be a feature, is to be built at a cost of $100,000.

One of the most encouraging facts about this work of training is the loyalty of the young natives to their teachers. These mission hospitals can afford to give only the most meagre allowances to native assistants, and the awakening governments are holding out lucrative offers to every native qualified to dispense, or operate, or teach, or nurse. Yet a careful search of the last reports of four of the largest missionary boards has failed to disclose a single instance where a hospital suffered the loss of an assistant on this account.

NATIVE APPRECIATION OF THE FOREIGN DOCTOR

These American physicians are doing more to disarm Oriental prejudice against Westerners and Western ideas than the entire diplomatic and consular service. The favorable attitude of Li Hung Chang to the United States, long before China's awakening, was largely due to the influence of Drs. Mackenzie and Leonora Howard, whose medical skill he had reason to appreciate personally. The late Dr. Mackay, a Canadian Presbyterian educated at Princeton, who spent more than a quarter of a century in the island of Formosa, had an experience that has been often repeated in other places. When he took up his station in the important city of Bangkah, many years ago, the prejudice of the natives was so great that they literally tore his house to pieces and carried the fragments away. Fifteen years later, when he was on the eve of returning to Canada, the chief officials of the city sent a messenger with the request that he would allow himself to be carried through the streets in a sedan-chair. Preceded by the head men of the city, a procession that included

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HOW THE HOSPITALS IN THE LARGER CITIES ARE EQUIPPED

The operating room in the American Baptist Hospital at Hanyang, China

eight bands of music, an escort of soldiers, and red umbrellas of honor accompanied him to the wharf, while the city resounded with the salute of firecrackers.

Many of these Americans have been especially honored by the governments in whose dominions they have done their work. One of the Baptist physicians on the Congo was made a member of the Legion of Honor; Dr. Grenfell, of Labrador, has been decorated by King Edward; Dr. Avison, of Seoul, whose report for last year included 126 visits to the Emperor of Korea, ranks at court just below a cabinet minister.

In striking contrast to the appreciation and honors that have been theirs in the countries where they labor, is the languid interest shown by the physicians in America in this, the most unselfish work that stands to the credit of their profession. I have been present at scores of medical and surgical meetings, ranging all the way from local societies to the American Medical Association, but I never heard even an allusion to the remarkable work of healing and of prevention being done by these overseas practitioners. It is a long search among the medical journals of the United States before one finds a single article about any of them. Much has been written and said by physicians with reference to the important work of Col. Gorgas in Havana and Panama, but never a word about Dr. Kerr of Canton, whose achievements even Col. Gorgas might envy. The men who risked their lives in the yellow fever investigations have been appropriately applauded by their colleagues, but no medical society ever hears a reference to the equally daring men that are even now imperiling their lives and those of their families in cholera epidemics of the Far East.

One reason for this indifference may be the fact that these physicians whose work is herein described have a habit of wrapping their powders in tracts instead of blank paper, but there is no evidence that this custom interferes with the efficacy of the powders. Because a surgeon prays before he cuts, it must not be inferred that his hands are unsteady or his instruments unsterilized. It deserves to be said that, were it not for the religious motive, these physicians would not be doing their work in barbarous and semi-civilized lands. Their support is provided not by charitable but by religious people, and for the specific purpose of extending the boundaries of the Christian faith. With all the wealth that its membership represents, who ever heard a suggestion that the American Medical Association send one or fifty of its members to Africa or China for unmixed humanitarian work? The commission held by these outgoing physicians reads in this way: "He sent them to preach the kingdom of God and to heal the sick." And it is simple justice to say that they are executing their two-fold task in a way that is both effective and inoffensive.

And they are doing it at great personal sacrifice. The physician's average salary of about $1,000 a year is not sufficient to surround his family with even the ordinary comforts of life, yet he is constantly declining positions offered to him by the native governments.

These men and women have a hard and a lonely task. Practically all of their friendships must be formed among people of an alien race. For the physician's wife, there are none of the refinements of cultured society. For his children there are no schools and only dark-skinned playmates. This means that he must either be separated from his children during the most interesting years of their lives, or else must resign his post and accompany them back to the homeland. But when the "All ashore!" warning is given aboard the homeward-bound steamer, the doctor and his wife usually go down the gang-plank and watch their treasure-ship slip away into the misty horizon. Possibly, it is the last time they are to see their children; certainly, they shall not see them again as children.

Beyond the rim of any horizon that spreads out before the world-traveler's gaze, these self-exiled countrymen of ours are doing their work among the Yellow, the Brown, and the Black. Their little dispensaries are the farthest outposts of the most merciful that Western civilization has produced. A century hence the missionary physician will not be needed; his place will have been filled by native men and women trained under his direction. Here and there some white-haired patriarch in China or Bombay or on the Congo will tell to a wondering generation strange tales of The Age That Used To Be — when chloroform and vaccines and serums were unheard of, and when the white-skinned doctor was mobbed when he came across the seas.

But ours is the privilege to stand afar off and watch him while he is doing his beneficent work.

CHINA'S AWAKENING AS SEEN BY A JAPANESE

A SYSTEM OF MODERN SCHOOLHOUSES WITHOUT QUALIFIED TEACHERS OR PUPILS—GOVERNMENT HONORS ONLY FOR GRADUATES OF THE OLD SYSTEM

BY

TOYO M. KANDA

[*Prof. Kanda is a young Japanese educator of distinction. On his graduation from Tokyo University in* 1902, *he was engaged as head professor of one of China's new colleges. At the conclusion of his four years of service, he was asked to serve another period of six years, but declined in order that he might make a careful tour of the world. He is now engaged in a personal study of Western politics and economics, after which he expects to return to his work.*—THE EDITORS.]

THE BOXER rebellion brought with it a conviction that the strength of China lay in the individual, and that a new system of education was necessary in order to bring the individual to a higher state of development. An unexpected decree was issued by the Emperor to the governors of all provinces, commanding them to take steps to establish modern schools. Peking University was established under the modern system and was placed in charge of the Minister of Education. This striking example at the capital of the Empire had its effect in other provinces. Grammar schools and institutions for higher education sprang up everywhere. The weak point in the organization at that time was that it lacked centralization. This being called to the attention of the Dowager-Empress, she issued an order that Chang Chi Tung and the Minister of Education revise the regulations. This was done and the new plan received imperial sanction at the end of 1903.

Under the revised system, a university was to be established at Peking; the institutions in the various provinces were to be called colleges instead of universities; high schools were to be located in the districts, grammar schools in "counties," and common schools in the villages. This plan met with such acceptance that schools sprang up all over the Empire. The majority of the professors and teachers were Japanese, who were welcomed both by the Government and the people.

This system of education, under the control of the Minister of Education, prevails to-day. The Chinese trait of imitation was shown in the erection of school buildings; whether large or small, the schoolhouses are modern in style. They are well distributed throughout China and, judging from these alone, one would be amazed at the remarkable educational advance; but a more critical examination will show a deplorable state of confusion and disorder. For example, take the military schools, where the work of the instructor is comparatively easy. The students are mostly boys, lacking even a rudimentary knowledge of an elementary education. The meaning of the new education is utterly foreign to their minds. The difficulty is made greater by the fact that the Japanese professor must give his instructions through an interpreter, and when the interpreter does not himself understand the new training the situation is almost hopeless.

Fortunately, we Japanese are familiar with Chinese literature, which we can read; this gives us a great advantage over instructors from other nations. Besides, military education involves but little oral teaching or lecturing; practice is the main thing—not lectures on the sciences or abstract subjects.

Turning to the regular colleges, we found a curious phenomenon. Theory and practice flatly contradicted each other. The regulations drawn up by the Peking Government were systematic and well arranged. The course of study was so graded that a student was expected to advance from common school to grammar school, from grammar school to high school, and from high school to college.

But in practice we found that the new education of the Chinese was modern only in name. There was a well-ordered college building, but there were no students that had been prepared to meet the entrance requirements. Those who came in response to the announcement that the college was ready were chiefly boys who had the lowest degree under the old system. But their heads had been hardened under the methods of the old school and the germ of the new education had a small chance to grow. The professors could not start in with the college curriculum but saw themselves obliged to establish a high school course instead. These boys had the glorious name of college students, but in reality there was nothing back of it.

Instruction was yet more difficult in the country districts and smaller towns, where the spirit of progress had not advanced as in the capitals of the provinces. In accordance with the directions of their higher officers, the local authorities had erected new buildings for the students, but they were unable to find suitable teachers for the new subjects. Although to outward appearances the command of the Emperor had been executed, in reality little had been gained in the advancement of the new knowledge. To offset this difficulty, the inspectors sent the more promising lads to Japan. Meanwhile the normal schools were endeavoring to fit instructors for the new teaching. Since such difficulties are inseparable from the transition period in any system of education, the officers cannot be blamed for the disorder that arose partly as the result of applying commercial principles too closely to intellectual processes and partly because of Chinese pride in their ancestry, an ancient national learning, which causes them to give little heed to the advice of foreigners.

By agreeing to establish schools and colleges, the local officials understand only that they are to provide buildings, with the supplies and expenses incident thereto, and maintain a staff of instructors. They feel no responsibility for the quality of the result.

NO REWARDS FOR THE NEW EDUCATION

The chief difficulty arose from the existence of the old school system, which the Government had not abandoned in ordering the new. For example, the new schools were obliged to close for three months of the best period of the year in order to allow their students to take the examinations prescribed for degrees under the old system, since the higher offices still required these degrees as a qualification. Nor was it understood how disadvantageously this enforced vacation affected the instruction of the remaining school period. The students seemed not only to have unlearned what little they had imbibed of the new knowledge but, by three months' cramming under the old, they had lost entirely the spirit and method of the new study. Of course, to some teachers the increased opportunity for vacation was very welcome, but the more conscientious felt that this was a great obstacle to good work and ruinous to the progress of their pupils. For as yet not a single generation was firmly grounded in the new way, and there was danger that it would be entirely overthrown by the stronger weight of custom and tradition.

The Government is seemingly unaware of the incongruity of administering both of these systems at the same time, and does not foresee what the outcome of such a mixture must be. The only really vital interest that the people at large have in education is due to the part it plays in securing the higher public offices; and the Government, by restricting opportunities for high office to the holders of degrees under the old system, gives it a tremendous advantage with the people over the newer learning, the practical use of which is not so evident to them. Nearly all who seek instruction in the new schools have failed under the old system, and consequently are not the most able and intelligent. Thus, the position of the Government in saying that it will take all the graduates of the new school that are able men is seen to be unfair, since the able men naturally gravitate to the easier and surer method favored by the Government for securing their ambition. On the one hand the Government cuts off the way to produce able men under the new training, and yet declares that it is ready to receive them. This inconsistency, unfortunately, is not confined to the older type of Chinese officialdom, but is the attitude even of those enlightened officials who are earnest in seeking to develop better public servants. From all this it would seem that any direct beneficial effect of the new education upon the Government is very remote, if not altogether dubious.

The Powers have feared that one day China would awaken, as Japan has done, and make the advance in modern civilization that

Japan has made within the last thirty years; and they have watched anxiously the efforts of the Japanese, assisted by similarity in race, literature, and aspirations, to establish their education in China. It was feared by some that a second Genghis Khan would come forth from the New China to be again "the scourge of all Europe." But we of Japan can say with assurance, and even with regret, that there is little possibility that China will show any formidable strength for years to come. The "yellow peril" is but an idle dream. The Chinese children inherit the conservatism of their parents, and it would take many generations to effect any considerable change in their character. Such a reformation, when it did come, would be a great benefit not only to China but to the whole Eastern world.

Let us not, however, conclude that there is little hope for China in the future. It has, we suppose, many able men among its 400,000,000 inhabitants. Likewise it is probably certain that there are and have been in that country many men who have understood the general current of world-thought, who have realized their responsibilities, and who would come boldly to the front to rank among the great men of the world. If these men, throwing open their minds broadly to the best influences from without, would make common cause for the well-being of their country, the future prosperity of this great Empire would not be beyond hope.

THE FAILURES OF EUROPEAN TEACHERS

From as far back as two centuries ago, China has welcomed many Europeans as teachers and advisers. But the real causes and conditions of their welcome have not always been understood. About 1760 the Emperor of the era of K'ien Lung had welcomed a Catholic missionary as chief professor of astronomy, to introduce to his empire the sciences of astronomy and mathematics. But the Emperor, having a strong conviction that China was the most cultured country in the world, gave him little scope for original activity, so he became simply an instrument of the Emperor. K'ien Lung was an able prince and little direct evil came of such treatment of foreign teachers on his part, but succeeding emperors, who had not sufficient ability to direct and utilize the capacities of foreign teachers and officials, followed the same policy. We cannot refrain a sm their foolishness. Consider its effects: Tl in contact with European civilization s back as two centuries and a half, and h engaged many Europeans to develop Cl civilization to a higher plane, yet the of all their efforts was that matters rem just as they had been before. Not one i tion of progress can we discover.

May we regard this lack of success sign of inefficiency on the part of the Eur professors? Not at all. We must attribut of their ineffectuality to the Chinese, wh bound their hands and feet in such a m as to narrow the compass of their a and to hamper them in their attempt t free rein to their powers. The Govern never realized its error and so formed t advised opinion that European education in no way benefit the Chinese. So no country is ready to welcome Japanese, i of Europeans and Americans, to instru people. It is not too much to say that is even now experimenting, as though f first time, with education by foreign tea

It is quite natural that the Europeans, activities were put under limitations, advice was rejected, and who had in thi much disappointment to undergo, should become mere instructors in language, if o escape from an undignified and false po

Therefore we from Japan are quick t to them our deep sympathy. For wl the situation of the Japanese teachers have been welcomed by the Chinese G ment at the present day? In it we see n different from the situation of the Euro of the days gone by. Their activitie hampered, their advice rejected, just a the case with their European predecessor

The Japanese are trained under syste discipline, educated under the law and well-ordered manner, but now they forth to attempt the guidance of a given over entirely to their own wilfu dencies. Often have they advised the G ment to make improvements in this o condition of affairs, but have received a "yes, yes," spoken only with the lips, from the heart. Many are disappointe cause they are unable to accomplish the which they hoped for, and consequentl harbor an almost resentful feeling towa officials of the Government. Thus we consider ourselves fortunate if our effor

not rendered ineffective in the same way as were those of the Europeans before us. Although for these reasons we may attribute the lack of result largely to the Government that had hampered their activity, we can hardly hold the Europeans themselves altogether blameless. For those formerly hired as teachers from Europe were mostly missionaries or customs officials of advanced years. The former were men well versed in things religious but in their knowledge of educational methods we place small faith; the latter deserve little consideration as educators in any capacity. We are therefore brought to the conclusion that it is small wonder that they became simply instructors in languages, for they appear to have had little ability for higher tasks. I have even been led to consider, though the opinion is perhaps without sufficient foundation, that those Europeans who secured comparatively high positions in China had no thought to advance the country to a greater degree of civilization—but consciously endeavored to escape instructing the people in technical sciences and strove only to impart to their pupils a good mastery of languages, that these pupils might serve *them* as the hands and feet serve the body.

The view of the situation which we consider most sound is as follows: that, excepting only a few, the Europeans hired by the Government to educate its subjects lacked the ability to fulfil their duties properly. It is only according to nature that some personal affection should arise between individuals bonded together in the relationship of teacher and pupil, but in this instance the teachers gave too much consideration to self-interest and the interests of their own countries. Now, teachers earnestly desiring the progress and happiness of their pupils should work for the interests of their flocks. Had this been the case, no matter how hard the heart of the disciple, he would have appreciated the intentions of his teachers. But this was far from being true in the case under consideration. In view of all this, we may conclude that part of the poor result, or lack of result, was due to the incapacity of the teachers.

THE NEW JAPANESE INSTRUCTION

What results, then, are the Japanese instructors in China producing? In numbers the difference is considerable. Formerly, in many of the less important cities, not even one European instructor was to be found. Now, however, in every province many cities may count foreign teachers by the score, and even the smallest have at least a dozen. So we can hardly justly compare the present condition with the former one, on account of this inequality in the number of instructors. But it would seem certain that the efforts of the Japanese will be crowned with success if they give to the task their full energy and warmest zeal, backed up by their naturally courageous spirit and aided by the similarity of racial antecedents and by a common literature.

To one important fact, however, deep consideration must be paid: that these are Chinese with whom we have to deal. It is the nature of the Japanese to think that if we undertake any enterprise with the courageous spirit natural to us, all peoples will cooperate, everything will go smoothly, and of necessity come to a successful termination. But the spirit of the Chinese differs from that of the Japanese in the most fundamental elements. If the Japanese undertake to educate the Chinese, expecting to meet with a spirit like their own to assist them, they have before them a disappointment as certain to come to pass as is the sun to rise to-morrow morning above the eastern mountain. A most important feature for us to consider also is the fact that the Chinese, though they have been governed by absolute despotism, are nevertheless individually a very wilful and tenacious people. We should attempt to get an insight into their inner nature rather than attach too much importance to external appearances. The Japanese, on the contrary, had been under a Government which was despotic in both form and fact before the Restoration; since then, they have lived in an atmosphere of constitutional government and administration according to law, and so have little idea of the sacredness of custom and of traditional usage. What they are now attempting to do in China is to engraft their own methods upon the educational system of that country, with practically no modifications. I venture to say that they will be exceedingly fortunate if they do not encounter insurmountable obstacles in working along such lines.

At present we know that an avenue to high positions may be opened to men who have been educated under the new system; but we can hardly look for very important results from this possibility, for the policy of the Government is very timid and conservative.

The making of a positive decision in favor of new ideas seems impossible for it. The present regulations open the way for graduates of the new schools only to comparatively inferior official positions in the Departments of Education or of Foreign Affairs. Taking note of this one indication of backwardness and persistent conservatism, we may consider as the voice of ignorance the utterances of those who cry noisily: "China is about to awaken! China is even now awakening! The sleeping giant is raising his head and making ready for action!"

It has always been a cause of great regret to us that both Europeans and Americans often fall into misconceptions of China, based upon inspection of externals only. I have lived in China for many years and have had many favorable opportunities to become familiar with the people, having studied carefully their sentiments, their customs, their mode of life, their politics, etc., and now I have come to America just to see how and what the people of Europe and America are thinking and expecting of this same China.

"CHRISTIAN SCIENCE" WITHOUT MYSTERY

MENTAL HEALING ON A SOUND BASIS AS PRACTISED BY THE EMMANUEL EPISCOPAL CHURCH, OF BOSTON

BY

ROLLIN LYNDE HART

WHEN the Rev. Dr. Elwood Worcester and his colleague, the Rev. Dr. Samuel McComb, launched their campaign for the mental treatment of nervous diseases at Emmanuel Episcopal Church in Boston, a year or so ago, there arose many critics to denounce the enterprise. "Christian Science!" cried some. It is no such thing. Unlike Christian Science, it is both Christian and scientific; Christian in that it affirms the reality of sin, scientific in that it affirms the reality of disease; Christian in that it heals without pay, scientific in that it heals by methods endorsed by the leading neurologists and psychologists of our epoch—men like James and Putnam of Harvard, Dubois of the University of Geneva, Jastrow of Johns Hopkins, and Bernheim of Nancy. Indeed, it is a foe to Christian Science, stealing its thunder by performing its cures without recourse to Eddyism.

Other critics insisted that the treatment of disease was in no sense the business of the Church. Had they read the New Testament? It intimates that the Church's Founder thought otherwise. Had they witnessed the oft-repeated scene in the minister's study, where people suffering from melancholy, irascibility, suicidal tendencies, and slavery to alcohol and drugs appeal, not to the physician, but to the clergyman? Says Dr. Worcester:

"The confessions that come out in the pastor's study are vital, often tragic. It was because of the necessity of dealing with these parishioners intelligently, in the first place, and second because I have been for a long time a student of psychology and a most interested follower of the Nancy school, in which the names of Bernheim and Lieubault stand forth so brilliantly, that the whole theory of suggestion has so long interested me. I had to deal with hundreds of individual cases, and I realized how much more effective the work would be if my patients could be brought together and the moral treatment joined with the medical."

Still others denied the relation between religion and health. Had they never thought of religion as a builder of sound character, and of health as a prerequisite to sound character? Had they never seen disordered nerves breed irritability, violent temper, selfishness, and a hundred other faults destructive of Christian virtues? Surely they cannot denounce a minister for his efforts to remove barriers to righteous living.

Yet again, there were those who asked what the Church had to gain by its new venture. This: a way to reach the "classes." You can

reach the masses with soup kitchens, gymnasiums, and instruction in stenography and dressmaking; but no such "loaves and fishes" appeal to the classes. Meanwhile the classes, being the chief sufferers from "nerves," respond eagerly when the Church offers healing.

THE SPONSORS OF THE MOVEMENT

Nevertheless, it was neither their antagonism to Eddyism nor their theory of what a Church ought to do, nor their desire to contrive a novel sort of loaves and fishes, that impelled these men to launch their campaign. The impulse was personal. Here was suffering on every hand; here were they, the one a former professor of philosophy at Lehigh University and for years an intimate friend (pupil, almost) of Dr. S. Weir Mitchell; the other a graduate of Oxford University, and an ardent student of theology and psychology: would it not be a crime for such men to refuse to respond to so urgent a need?

But while criticism abounded, so also did sympathy. Dr. James Jackson Putnam, professor of neurology at Harvard, joined the cause. And no sooner were the first meetings announced than the public responded with amazing enthusiasm. On four successive Sunday evenings Emmanuel Church was packed with the afflicted, the curious, the seekers after novelty, and the many who felt that they owed it to themselves to learn the principles upon which the new work was based. At the outset they were told not to expect too much:

> "Of course the principle of suggestion is available only within certain limits. It is not a panacea or cure-all. Its successes have been achieved in the treatment of functional nervous disorders, hypochondria, insomnia, dyspepsia, neurasthenia, drug-habits, hysteria, and like ills and diseases. Hence only patients troubled with these or similar maladies are accepted."

Next they learned that no one would receive treatment unless a competent physician so advised. Such physicians were present, ready to give counsel. However, there would be classes in right living, which one might join. No overstatement of claims, you see, no address to sentimentalism or popular excitement, no divergence from cool, judicious, scientific procedure. This, one might have imagined, would dampen enthusiasm. Not at all. The Wednesday evening classes soon grew so big that the guild room would no longer hold them and the church itself had to be opened. In a few weeks the clergy at Emmanuel had 200 patients on their hands. Far from ebbing, the tide of activity has steadily risen. All sorts of people—rich and poor, Protestants, Catholics, and Jews, people from Boston and people from remote suburbs—flocked to the "moral clinic" and found it "a clearing-house for sorrow."

Only rarely did the papers class the work at Emmanuel with "Boston fads." It was too intimately related to the work of the universities, here and in Europe, to invite flippancy. Besides, the lectures of Janet and Putnam had prepared the way for it. Thousands, meanwhile, had learned to say: "Despite the craziness of the Christian Scientists, I believe there is something in what they teach." Here was a movement that detached that "something" from its enclosing mass of moonshine and charlatanry, gave it clear statement on scientific grounds, and applied it only where it could rightly be applied. It sounded sensible, and its results proved its beneficence.

THE MIND MASTER OF THE BODY

Incidentally it forced a general recognition of the influence of the mind over the body. The old-time physician sought to cure nervous and mental maladies purely by drugging. Given a healthy body, thought they, the healthy mind would result. Yes, but what if the mind were in some cases acting as "the subtlest of poisons" (so a Hindu sage called it 3,000 years ago), actually preventing or retarding the body's recovery? What if the trouble, as is often true, had its seat in the mind and not in the body? Such questions lead to a reconsideration of the effects of the mental upon the physical. Fear, for instance, will quicken the pulse and even, when extraordinarily intense, produce in certain rare though actual cases—I say actual because they are recorded in trustworthy medical journals—such catastrophes as paralysis, jaundice, sudden decay of teeth, eczema, erysipelas, and death itself.

Physicians are beginning to look less sceptically upon reports of people who become seasick before the ship has left her wharf; of medical students who "suffer" from each of the symptoms they read about; of college boys who make a classmate ill by merely telling him he looks so and sticking to it. However much legend surrounds the facts, there are facts there, nevertheless. Far more amazing instances of

diseases mentally caused are vouched for by unimpeachable authorities, as when Professor Paul Dubois, one of the foremost European neurologists, whose work is open to the most rigid scientific scrutiny, tells the following story in his book on "The Influence of the Mind on the Body":

"A young soldier presented himself at the [Nancy] hospital; the professor examined him, verified a sore throat, and gave him a gargle. Then, desirous of showing his class the power of verbal suggestion, he takes the young man's arm and says to him point blank: 'Since when has your arm been paralyzed?' The astonished patient declares positively that there is nothing the matter with his arm. But the professor stands firm. 'See, gentlemen', says he to the students, 'here is a young man who has been attacked by a rare affection, psychic paralysis of the right arm. You see how this limb hangs, without life, by the side of the body and falls back again when it is lifted,' and joining the action to the word he raised the arm, which really fell back like a club. The arm was really and truly paralyzed, and it was necessary next day to restore it by inverse suggestion, which was quite as easy."

So the mind may affect the body beneficially as well as injuriously. By detaching your attention from pain, you reduce or dismiss it. A concert or a play will often cure a headache; football players rarely feel bruises during a game; soldiers have been oblivious to wounds till they dropped from loss of blood; a tooth will stop aching as you are on your way, with thoughts diverted, to the dentist's. Much depends also upon mood. The mental phenomenon called faith will lend efficacy to charms, ikons, quack medicines, and the laying on of hands. It explains the cures (when they are cures) at Lourdes, Ste. Anne de Beaupré, and the Christian Science establishments. It also accounts for the "gold cure." There is no such thing as bichloride of gold; instead, there is an elaborate and highly beneficent system of deception, by which a dipsomaniac is convinced that the chains of habit are broken.

Clearly, then, the mind contains a whole reservoir of potentialities that can be utilized to immense advantage in the prevention, relief, and even cure of certain diseases—*i. e.*, those of a nervous character. The tapping of that reservoir is possible through suggestion or through auto-suggestion — as foreshadowed, perhaps by accident, and yet possibly by the intuition of genius, in a notable passage of Shakespeare:

Macbeth

. . . . . .

"Canst thou not minister to a mind diseased,
Pluck from the memory a rooted sorrow,
Raze out the written troubles of the brain,
And with some sweet oblivious antidote
Cleanse the stuffed bosom of that perilous stuff
Which weighs upon the heart?"

Doctor

"Therein the patient
Must minister to himself."

Yes, to himself, and by a process somewhat analogous to self-hypnotism. But here let me insist on clear statement. I have seen a showman hypnotize a dozen small boys and make them act upon every suggestion he threw out. "Boys," said he, "I'm going to give each of you a fine, red apple." Then he gave each of them a raw potato, which the urchin bit into with every evidence of delight. Again, he said, "It 's cold to-day, fifty below zero. When I came out of my house this morning I found a man frozen to death on my doorstep." Before the showman had got this far, the boys rubbed their hands, pulled their caps down over their ears, and beat their arms to and fro, cabman-fashion. Then the hypnotist said, "Dear me, what dirty faces! Boys, you ought to be ashamed to come before an audience in such a condition! Now I 'm going to bring you a basin of water." Instead he brought a pan of flour, and instantly the youngsters washed their faces in it. Psychologically, all this was simple. Hypnotism isn't the control of a strong mind over a weak one; it is an arrest of reason, leaving the non-reasoning portion of the brain (called by scientists the subconscious or subliminal self) a prey to suggestion.

Now, as the clergy at Emmanuel fully understand and as they intend soon to explain in a book they are preparing, it isn't essential that the reason shall be put to sleep in order that the subconscious self shall be made responsive to suggestion. In the case of the man whose arm was paralyzed by the mere assertion of a scientist and in the case of patients cured of alcoholism by "bichloride of gold," it was the subconscious self that did the work. Nor need the subconscious self be played upon from without. A patient may himself make remedial suggestions to his own subliminal consciousness, which passes them on automatically to his body. When the hypno-

tist's young victims were making fools of themselves before an audience, they were not aware what they were doing. Similarly the sufferer from nervous diseases need take no account of the method by which suggestion acts. The right suggestion will produce the right result quite of itself. For instance, here is Dr. Worcester's mental cure for insomnia: Say to yourself, "I am going to sleep. I am drowsy, drowsy. I can't keep awake. I am drunk with sleep." Never mind if the top of your brain retorts, "Stuff and nonsense!" the underside of your brain takes the hint and lulls your body into slumber.

To teach the fine and beneficent art of fooling the body into good behavior is the purpose of the Wednesday evening classes at Emmanuel. It is a varied art, involving the command of a whole battery of ideas, for not all suggestions attain the definiteness of the one regarding sleep, nor are all their operations so direct. Neither does the class give its entire time to study. First singing, then prayer, then a practical talk by Dr. Worcester or one of his associates, and finally a series of short testimonies in which patients report, for one another's encouragement, the progress they are making and the sources of their improvement. In a word, it is a remodeled prayer-meeting, its aim being to "create an atmosphere of aggressive cheerfulness."

HOW NERVE-WRECK MAY BE AVERTED

It is to the addresses, naturally, that interest especially attaches. Suppose the speaker is Dr. J. Warren Achorn:

"Much of the prevailing nervous ailment," says he, "is due to worry, superinduced by a guilty conscience and distrust of self, started in the child by the inexcusable nagging and fault-finding of its parents. The sense of humor should be cultivated in every child, and it will prove a panacea for many ills. Everyone should try to tell at least one funny story at the breakfast table every day, and thus the day will be started right. Worry retards digestion and banishes sleep, and thus causes nervous ailments. The same is true of unnecessary sorrow, anger, and 'the blues.' They are bad habits that can be conquered. Indulge in neither retrospection nor introspection. Cultivate only thoughts of happy experiences, search out the companionship of happy friends, read books of the right sort—avoid disagreeable books; work, if not for yourself, for others, and let efforts to correct their bad habits aid in curing your own."

Or if Dr. Worcester himself is to address the class, you may expect some such remarks as these—I quote from a recent magazine article of his: "It is your fears, your sad thoughts, your repinings, your irritable complaints that are making you ill. For those thoughts do not arise without their physical concomitants. They set your weary nerves to jangling, they throw the most tired cells in your poor brains into convulsive, harmful activity. That is why it is so bad for you to think about your symptoms and to talk about them. That is why many experienced physicians will not permit their nervous patients to receive visits from their friends; not that the sight of a friendly face is injurious, but that such visits lead to conversation about suffering and disease."

Sometimes, however, the evening's address treats matters less commonly understood, as when Dr. Worcester, speaking of anger, its effects, and its prevention, said: "When you get angry, there is always a moment just before when you know you are going to be angry": check yourself at that moment and you save yourself the strain of a nerve tempest and all its aftermath of chagrin and remorse, which are almost as baleful in their influence upon the body as the original cataclysm. For the most part, though, the instruction involves no such subtleties. They are reserved for application to individual needs as developed in the diagnosis of individual cases.

A HELP TOWARD SELF-MASTERY

Writing of the Emmanuel movement, Dr. McComb says, "The aim is simply to bring peace to the conscience, to kindle hope, to create faith and to dispel all that is evil, injurious, sad, inharmonious in the patient's life and mind. The sick in mind and body can do much for themselves, but often they must be helped to gain self-control, 'to draw from their own well,' and they must be taught how to manipulate their mental and moral resources with a view to perfect health. Often a man can carry his self-treatment up to a certain point, but beyond that he cannot go. His will-power fails, he loses his grip and becomes discouraged. Then a wise and sympathetic physician of mind or body must intervene to do for the patient what he cannot do for himself, and to prevent the latter's efforts from being lost. All this labor is done mainly

by personal dealing with the patient. He is encouraged to trust the constitution of his own being, to utilize its mysterious forces for his well-being. Then ideals of inner calm, of spiritual poise, of freedom from black care and harassing worries are persistently kept before the mind until its sub-conscious activity has been stirred and the wished-for trend of thought secured. In many, perhaps the majority, of cases under our care, the real root of the mischief is a moral fault. Nervous people are generally egotists. They are self-centered, always think of themselves, and conceive of the universe under only two categories: its friendliness or its hostility to their own petty interests. Hence their great need is to have these morbid thoughts displaced by something attractive, and this is best done by giving them some task which will take them out of themselves and make them minister to others' necessities, or by stimulating and healthful courses of reading."

Doesn't all this sound sane and reasonable? Long before Drs. Worcester and McComb began their work, nerve specialists were using suggestion with admirable results. I once watched an eminent neurologist treat a case of incipient nervous prostration. The patient, a lady, was subjected to all the tests for nervous disorders. After an hour's investigation, the doctor burst out laughing — "Nothing the matter, madam; absolutely nothing the matter!" Then he directed the patient how to rearrange her work, with a view to relieving strain, and sent her home jubilant. Meeting her brother next day, he said: "Annette came to me yesterday, but I found nothing wrong with her"—thus using the brother as a means of reinforcing the suggestion of health, for the remark would inevitably be repeated to the patient. You see what all this meant: the ailing body had produced the ailing mind; the ailing mind had prevented the recovery of the ailing body; it was what physicians call "a vicious circle." To break it, the mind must be freed of fear, anxiety, and distress. Instead must come peace and hope and buoyancy.

And think of how trifling in the main are the causes of mental torment! Unless looked at through the microscope of morbid fancy—morbid but not uncontrollable—the most of them are mere nothings. At Emmanuel the patient is taught to reduce such trifles to their true dimensions. Says Dubois: "There are people who are true virtuosos in the art of making the lyre of the emotions vibrate. life is passed in tormenting themsel making tragic the smallest events in th When a lady, for example, is endowe this grievous impressionability, she is by excitement from morning till night an from night to morning. On awakir is in a state of anxious agitation which the day; she feels herself already under the weight of all that she has to of all that she will have to bear; she suffe it by anticipation. The little vexations every mistress of a house has to bear for her simple annoyances; they are c phes, and the morning is already full o At noon one of the boys has not re Instead of supposing that he has loiter his little comrades, the mother takes her head that he has been run over by a car and the servant must go and look f During this time the soup or the roast is l In the afternoon there are new emotions of a letter in which she reads betwe lines what is not there, or because of a te which is opened with trembling han which proves only to contain some insig news. At the end of the day the u woman has supported twenty sorrows were only imaginary—the fruit exc of emotion. She has weakened her system in spite of the futility of the They affect her sleep, which is troubled b ful dreams. The individual rises with head, made more sensitive by fatigue, sti incapable of controlling herself, and tl day the interminable succession of tional commotions recommences." Em Church would make short shrift of her c

Cases there are, though, that won't easily—those of dipsomania, for insta of drug habits. Then the heavy gun up. As a last resort, hypnotism is us victim is put into the hypnotic sleep and abhors alcohol or morphine. Waki retains the idea. Relapse, if it occurs, i teracted by a repetition of the treatment

REGAINING CONTROL OF NERVES

Such, in general, being the plan of ca at Emmanuel, what of results? They a encouraging. Dr. McComb, in a publi ment, cites representative instances of s "First, a clergyman who for a year or been the victim of insomnia. Sleep c obtained only by the help of strong drug

his life became a wretched slavery. In despair he applied for help. The first night after treatment he slept for seven hours. So far as he has since followed our instructions, his rest has been good. Another patient is a business man. He complained of indifference to life and its interests, of want of sympathy with the misfortunes of others, of a kind of moral callousness that was ruining his life. Proper suggestions were made to him. He was encouraged to repeat them mechanically to himself, especially when about to fall asleep. He reports himself much better and on the way to fully restored moral feeling."

A third case, an aged man suffering from creeping paralysis, an incurable disorder, on his first visit with violently shaking limbs, after a few quiet reassuring suggestions experienced a reduction in the extent of the vibrations to the amount of about 25 per cent. Subsequent treatments reduced the nervous tremor still further.

"A fourth, a young woman, who has reached an acute stage of nervous prostration, suffered from almost constant insomnia, fixed ideas, with periodic maniacal outbursts, was relieved at the end of a week. Sleep has been greatly improved and the mental state has become normal.

"A fifth, a school teacher, in consequence of nervous lapse had lost control, began to fear the children under her care, and thought of relinquishing her profession. She was instructed in the art of self-control and of control of others. The notion of fear was dislodged by a sentiment of love for her little charges, and in the course of a few weeks this conscientious and experienced teacher regained her poise and found herself performing her duties better than ever before."

But the larger, more significant, result you must seek in the diffusion of sane ideas of living. Thousands, predisposed to nervous breakdown, have learned how to ward it off. Thousands, already losing control of their nerves, have discovered ways to regain command. Meanwhile, unnumbered homes have found means to reduce jar and strain and friction. Best of all, perhaps, is the indirect effect upon children. "In this domain of nervous diseases, "writes Paul Dubois, "it is easy to prove the contagion of example. We see little girls already imitate their nervous father and hysterical mother, throwing themselves upon a sofa at the slightest fatigue and complaining of backache and headache. They are sensitive to all exterior influences, cannot take food which they do not like, and become unnerved like their mother. They play so well the part of little nervous women that they are caught in the snare and become so really. Nervous parents, think of this danger of moral contagion!"

BREEDING PLANTS AND ANIMALS TO ORDER

THE EXACTNESS WITH WHICH NEW VARIETIES CAN BE PRODUCED TO MEET SPECIFIC NEEDS

BY

E. T. BREWSTER

It is common knowledge that the great Darwin got much of the evidence for his theory of evolution from gardeners, nurserymen, stock breeders, pigeon fanciers, seed men, and other highly practical persons, who were doing on a small scale precisely what Darwin believed Nature herself to be doing on a large one. Both, he saw, were producing from time to time new sorts of animals and plants: both, he proved, were doing it in pretty much the same way.

But though all this happened fifty years and more ago, it is hardly more than five since the disciples of Darwin have been in a position to repay their old debt. Only lately has the general theory of organic evolution become so precise and definite as to be of much real aid to the working breeder in guiding the tremendous

forces of creation. It is the story of Bessemer steel over again. Men made good steel ages before Mushet showed them exactly how they had been doing it. After that came the Bessemer process—and the Steel Age.

Of all the scientific ideas which the Darwinians have contributed to the work of practical men, the most fundamental and important is the doctrine of *unit-characters*. The unit-character is the indivisible minimum, the element in each living being that is inherited completely, or else is not inherited at all. To be sure, there are unit-characters which, like the radium atom, refuse to conform strictly to definition; while two biological atoms, like two chemical atoms, may sometimes unite to produce something not in the least like either. Still, as things go in the world of practical affairs, both sorts of atoms are fixed and indestructible.

The "angora" coat of several animals is such a unit-character. Either the hair stops growing at a certain length, or else it does not stop. One does not find cats or rabbits or guinea-pigs that are half-way angoras. They all are either short-haired or long-haired; and when one breeds the two sorts together, some of the descendants have one sort of hair and some have the other: but there is never any doubt which is which. But while the length of a rabbit's hair is such an hereditary unit, the length of its ears is not. Various breeds have ears of all lengths between four inches and eight; and the offspring of any particular cross are all alike and all intermediate between their parents. Most striking of all these unit-characters is, of course, sex. We have two parents; we inherit the sex of only one, and that single difference permeates every organ of the body, from the length of the hair to the proportions of the toes.

Anybody can make a dwarf pea by planting the seed in poor soil; but he cannot produce a dwarf race in that way, because that kind of dwarfing is not inherited. Plant the seed of the starved pea in good ground, and it becomes full-sized once more. On the other hand, there are certain dwarf stocks in which low stature is a unit-character. No matter how rich the soil nor how thorough the cultivation, the plant remains small; while a cross with a naturally tall stock gives to remote generations some dwarf peas and some tall, but none half-way between. Past, therefore, are the days of dependence on slow amelioration and improved cultivation. Modern scientific plant-breeding has become a search for unit-characters.

So much then by way of theory: let us now turn to the solution of an actual problem.

PRODUCING A NEW KIND OF WHEAT

The English baker insists that his flour shall be what he calls "strong"; which means that it can be baked into the particular sort of loaf which the British housekeeper will buy. Unfortunately this somewhat inscrutable quality of strength seems not to inhere in English grain; and the baker, in consequence, pays a shilling or two more for American flour. Naturally, the English farmer tries American seed—only to find that in English soil and climate the yield is so poor that the higher price does not offset the smaller crop.

Lately the matter has been taken up by one of the most thoroughly scientific of all plant breeders, Mr. R. H. Biffin, of the Cambridge University Department of Agriculture. Mr. Biffin found that the "strength" of flour is usually due to soil and climate, and that the strong American wheats grown in England rapidly deteriorate. He discovered, however, simply by trying, that there are one or two American races in which strength is a unit-character. It is, in fact, not an uncommon occurrence for the same quality to be in one plant a mere accident of cultivation which disappears with changing conditions, and in another a full unit-character, hereditary and persistent for generations. Indeed, some of the most successful Continental breeders of grains have for some time taken pains not to give their seed plants high cultivation, lest they be misled by its effects. So Biffin crossed his selected American wheat with a standard English variety. It goes without saying that both sorts, in addition to the alternative pair of units, strength and weakness, had each a score of other qualities. Fortunately, however, it is a peculiarity of unit-characters to be inherited independently of one another. In a field of these hybrid plants, therefore, there were some that had this combination, and some that had that. Some were largely American and some largely English, as the qualities of the two strains fell together, according to the laws of chance. Biffin had, therefore, only to hunt over his plot until he came upon a plant which chanced to be English in everything except the American quality of "strength." From this single plant he started

his new wheat, English in all respects but one, and suited to English soil; American in one quality only, and suited to English palates.

ONE PLANT FROM 40,000 HYBRIDS

This is essentially Burbank's method. Burbank has never been an especially scientific person, but with the happy intuition of a man of genius he has, quite independently, seized upon this principle of hereditary unit-characters and applied it with extraordinary skill. He takes his units wherever he can find them—it may be close at hand, it may be from the other side of the earth—and combines them into a new being the like of which never was before. His success is in no small measure due to the scale on which he works. With only a dozen of these hereditary units, any one of which may be present or absent in any particular cross-bred plant, the chance combinations will bring all the desirable qualities together but once in about 4,000 cases. Burbank, however, has to bring simultaneously into one happy combination scores of unit-characters which have never been together before—and he plans accordingly. In one of his experiments with blackberries, he raised in one season 40,000 hybrid plants, and from these selected the single one which combined the virtues of all. The rest he burned, root and branch and berry, in one huge pile, thirty cords at once. Burbank's methods are, therefore, neither unique nor especially new. What is both unique and new is the boldness and certainty with which he applies them. As for the purely scientific value of his work, that remains to be seen. The Carnegie Institution has granted him $10,000 a year for the next ten years, and his results are to be recorded, systematized, and put into shape for other less gifted men. Orthodox science and Mr. Luther Burbank have at last made one another's acquaintance. The outcome should be to their mutual advantage.

Everywhere in the work of recent plant breeders one sees the same dependence upon unit-characters. The United States Department of Agriculture got its new frost-proof orange, which will grow 400 miles north of the present range of oranges, only when Dr. Webber transferred bodily the unit, not-affected-by-temperatures-down-to-eight-above, from the hardy but otherwise worthless trifoliate orange. The Department got its hardy and prolific long-staple upland cotton—worth twelve and eighteen cents the pound when ordinary cotton is bringing nine and ten—by picking out the desired unit-character from the sea-island cotton. In the region of the Dakotas (where since the first year of the century they boast the first fruit-breeding greenhouse ever built) some thousands of planters wasted some millions of dollars in trying to introduce the fruits of other climes, before they found out that the only way to give a fruit-tree endurance against cold is to give it one local ancestor which already possesses that quality.

A WHEAT IMMUNE TO RUST

Again, to come back to the breeder with whom we started, Mr. Biffin has at last beaten the yellow rust of wheat, a disease which costs Great Britain a considerable number of thousand pounds sterling each year. An old-time breeder would have chosen for his starting point that one of the standard varieties which is already least susceptible to rust, and tried to better that still further by selecting year after year the healthiest plants. Consequently, he never would have known whether any individual plant was really immune or had merely escaped contagion. Mr. Biffin followed a method precisely the reverse. He took the worst rusting variety that he could find, the "Michigan bronze," an excellent wheat but so easily attacked that in the damp climate of England it with difficulty ripens seed at all. This he crossed with a completely immune but otherwise pretty worthless sort. Of the hybrids, three plants in every four were badly rusted. The fourth stood out here and there in the field, fresh and green and entirely untouched by the blight. Since, therefore, none of the healthy plants had escaped by accident, it remained only to select an individual plant in which were combined all the other characteristics of Michigan bronze. Thus the Experiment Station at Cambridge is in a position to produce in only three generations a pure strain which, always coming true from seed, shall combine immunity to yellow rust with any other designated quality that is also a unit-character.

BREEDING SEED-GRAINS TO ORDER

But the man who has carried farthest of all this principle of unit-characters or nothing is Nilsson of Svalöf, a town in Sweden just across the water from Copenhagen. His case is especially interesting because he is employed by a great grain-breeding syndicate, which is

concerned strictly with a "business proposition," and uses the most thoroughly scientific methods only because they pay. Sweden is a country of very diverse climates and soils; the Seed-Grain Society for Sweden makes a specialty of suiting precisely each local need. One farmer finds he could sell his barley to a neighboring brewer if only the particular German variety which the brewer wants could be made to grow in Sweden. Another, whose land is wet, wants seed like that of his neighbors, except that it shall prefer wet land to dry. A third wants to raise a lowland crop in a mountain valley.

It is just such particular demands as these that Nilsson supplies. The corresponding unit-characters he picks up wherever he can. Usually, however, he finds all that he needs for years to come right at hand in his own fields. For the number of individual plants in a field of grain or of grass is enormous, and experience shows that new combinations of units keep turning up spontaneously, both from accidental crosses and because, as we shall see, unit-characters do appear *de novo*. Nilsson, therefore, follows strictly the principle of "single seed breeding," a fundamental principle of scientific plant-breeding and one which has been worked out independently by several different persons, including our own countryman, Hays. Every one of the three thousand or more varieties which are at one time under test is the offspring of a single plant whose every peculiarity, from seedling to seed and from the number of spikelets in its ear to its ability to stand up under a thunder-storm, has been carefully determined and recorded, while its pedigree is known as accurately as that of a race-horse or a crowned head. Only thus can the breeder be certain concerning every visible quality and every latent strain.

THE NEW SCIENCE OF ANIMAL BREEDING

Animal breeding too is becoming a question of unit-characters, since the more we know about both animals and plants, the more do we find them to be fundamentally alike. But as cows are vastly more complex—and expensive—than cabbages, the animal breeders have been somewhat slower than the breeders of plants to risk effort, time, and capital on methods which have been thoroughly tested only on such small and quick-breeding creatures as mice and guinea-pigs. Even among plant breeders, the breeders of grasses and grains are somewhat in advance of the breeders of fruit trees.

But to come at once to an actual case, the Hampshire swine are a breed of uncertain origin which has of late years been a decided favorite in the Middle West. The hogs are properly black with a white belt around the body at the shoulder. Even among registered Hampshires, however, about 10 per cent. are without the belt, and these naturally occasion a considerable loss to their owners, since, of course, no farmer wants to pay the full price of registered stock for an animal that lacks the characteristic marks of the breed. Nevertheless, the breeders of Hampshires have never been able to eliminate these "blacks" from the strain.

It appears furthermore that if two belted individuals produce any blacks at all, these make one-fourth the litter; when a belted animal is bred to a black, either the entire litter is belted or else the young are half one sort and half the other; while if black is mated to black, the young may be all black or all belted, or some may be one and some the other. Finally, a belted animal may have white hind feet; a black animal always has white fore feet. Evidently this is a pretty complex problem in heredity; one, moreover, that up to a year or two ago could not be solved by anybody. Within the year, however, Mr. W. J. Spillman, of the United States Department of Agriculture, following a somewhat similar case studied in the guinea-pig by Castle at Harvard University, found a complete explanation.

UNIT-CHARACTERS SOMETIMES COMBINE

It turns out that the belt in the Hampshires is not one unit-character but at least two. Two factors, otherwise unknown, go to produce it; and if either factor is lacking, the belt does not appear. But like other such units, these factors are transmitted independently. A black animal may then lack the belt because it lacks one factor, or because it lacks the other, or because it lacks both. Without going further into details, Mr. Spillman showed that instead of there being only two sorts of Hampshires, there are really nine, four belted and five black. Only one of these is entirely free from latent blackness, always has both factors, and always breeds true. He gives simple rules by which, by means of trial matings, any farmer can pick out this particular sort from the other three which look exactly like it, and thus put an end

once for all to the appearance of the unprofitable "blacks."

Meantime, to show how intimate now-a-days is the contact between theory and practice, two practical breeders of swine, Messrs. Q. I. and J. P. Simpson, of Palmer, Ill., have discovered that these same two belt-factors are present, singly, in several other domesticated breeds. Some breeds have one, some have the other, some have neither; consequently none are belted. When, therefore, the belt, which is supposed to have characterized the original great-grandfather of all pigs, chances to appear, as it sometimes does in some modern pig, the mysterious "reversion" probably means only that the two elements of the ancient belt happened to get together in a chance cross. This is, in fact, the modern explanation of other such strange reversions to long-departed ancestors. The Simpsons, however, knowing which of various common breeds have one belt-factor and which the other, know in advance whether any particular cross will 'revert' or not. Conversely, as they have lately made public, they are now at work on a method by which they hope to be able to "break up" and thus eliminate other undesired but persistent qualities.

IMPROVING THE BREEDING OF FOWLS

Opposite in certain respects to the Hampshire swine, are the "blue" Andalusian fowls. Here, too, the blue color is not a simple unit, but the result of compounding two units, which separately appear—one as black, the other as white. But as is usual in such cases, the two unit-characters tend to segregate themselves in accordance with Mendel's law of heredity. Thus, of the offspring of two blue parents, one-half are blue, one-fourth black, and one-fourth white. Thereafter, black mated to black gives only black, and white mated to white gives only white; but black mated to white gives the blue again. So there is no possible way of getting rid of these black and white "wasters," and any effort spent in the attempt is itself wasted. Thus our new science of heredity, substituting certainty for guessing, shows what cannot be done by scientists, as well as what can.

As if this sort of puzzle were not quite enough to plague the breeder, there are other cases commoner still, in which two of the three sorts of individuals still further complicate the matter by looking exactly alike.

Every year probably thousands of cattle are dehorned—though of course, the operation has no effect on the breed. There are, however, hornless breeds, and such "polled" animals often bring twice the price of horned cattle otherwise like them. In spite of this, no dairyman can reckon on dehorning his herd by heading it with a hornless bull and selecting the polled calves. The trouble is that the combination of horn-unit and pole-unit produces a polled animal, but a polled animal with latent horns. And since, during the processes of dehorning, any particular creature is likely to have at least one horned grandparent, the most placid of hornless cows may, for all her owner can tell, be carrying concealed weapons with which to arm her calves.

BREEDING A RACE OF HORNLESS CATTLE

To the ordinary farmer the whole matter was a baffling mystery until Mr. Spillman, whom we have already met in connection with the Hampshire swine, recognized in it a case of "Mendelizing" unit-characters. The secret of all such cases is that while both units may be present side by side in the same animal, no individual ever inherits both from the same parent or transmits both to the same descendant. The calf, therefore, which chances to take the polled condition from its half-bred sire, cannot at the same time take the latent horns. If, then, it does not get horns from its dam, it does not get them at all; and so can never transmit horns to any of its descendants. This is, in popular language, the point of the much-discussed "Mendel's law"—"the greatest discovery in biology since Darwin."

Armed with this simple principle, the farmer, by keeping full pedigree records of all his cattle, can quickly distinguish between those hornless individuals which have "recessive" horns, and those which lack completely the horn-unit. Thus, although it has not been practicable heretofore to dehorn a herd by means of one pure-bred animal, now it can be done even though the single polled animal is only half-bred. To be sure, the practice of this method is still in the veal stage; but long before we tell our grandchildren how men used to travel on the ground, we shall be telling them how milch cows used to have horns!

NATURE IS YET IN EVOLUTION

Speaking broadly, then, let the modern scientific breeder of either plants or animals

once get his hands on a unit-character and he can do a good deal as he pleases with it. But suppose he has not his unit-character and no searching of the ends of the earth enables him to discover it, what then is he to do? For one thing, he can wait for it to turn up. We now know that new unit-characters do appear from time to time, and that old ones drop out; though we do not know how or why.

PRODUCING NEW HERITABLE UNITS

Moreover, two recent studies seem to prophesy that Nature can be prodded out of her too leisurely ways and made to provide these "mutations" in greater quantity than she has been doing. To be sure, there is no way of telling what such new unit-characters will be. If one should cultivate a bean plant until it were twenty feet tall, and one of its seeds should prove to be a "mutant," that mutant would be just as likely to be a permanent and hereditary dwarf bean as anything else. Still, if we can so shake up the protoplasm of any plant or animal that it shall, even in a random sort of way, "throw" new heritable units, some of these may, by sheer luck, be what some breeder is looking for.

Just this, Professor MacDougal of Columbia, a disciple of de Vries, has been doing to primroses. He took his plants while the ovules were maturing but before they had been pollenated, and injected the seed capsules with various chemicals—zinc sulphate, calcium nitrate, sugar solutions, radium preparations. Such seeds as survived this ungentle treatment for the most part grew into plants like their parents. A few, here and there, developed new unit-characters and became new species of primroses. The differences are indeed small but they are real unit-characters, so that the seeds of the new primroses never produce plants like the old ones.

NEW SPECIES OF POTATO-BEETLES

Since, however, we began with plants, we may very well end with animals, and consider Professor Tower, of the University of Chicago, and his nine new species of potato-bugs. Not that anybody really wants any new sorts of potato-bug; but we do want very much indeed other sorts of animals which we may be able to get by the same general method—a method, moreover, which Professor Tower has been the first of mankind to apply.

Aided by a grant from the Carnegie Institution, he found that fifteen years of the usual breeding methods were powerless to produce any permanent and heritable modification in our common potato-beetle. One device only was effective. That was to take his beetles just at the time when the eggs were maturing in their bodies and subject them to the shock of changed surroundings. Especially effective were hot and dry air, and air at less than normal pressures. Such stimuli produced not the slightest effect on the beetles themselves, nor on the majority of their offspring. A hundred of the "shocked" eggs might hatch out normal beetles, but the next one might be something different. It might lack the yellow color of the wing-covers, or the black spots on the body, or it might have wavy markings in place of the ten familiar stripes. On the other hand, the differences might be physiological—one new sort throve in a damp climate unsuited to *L. decemlineata*, while another produced five broods a year in place of the usual two. Still another, tested in a state of nature in competition with the parent species, proved to be so much more hardy and prolific that Professor Tower was constrained to go through his fields and slaughter every last beetle lest they escape into a world already sufficiently provided with destructive pests. In any case, however, the changed attribute involved some unit-character. The new form might "Mendelize" with the old; it never "reverted" to it. Not for Tower and MacDougal the patient selection, year after year, of the old-time breeder. Not for them even the prompt results of the newer methods. The best of these can hardly establish a new variety inside of three generations: the later methods do it in three weeks.

Here—for the present—the matter stands. The world has no pressing need of any new sorts of primroses; it certainly is not looking for any new kind of bug. Nevertheless, the world would be mighty glad to get some quite commonplace unit-characters into particular animals and plants. The United States Department of Agriculture calculates that Mr. Burbank's improvement of the potato alone has enriched the country by more than $17,000,000. Suppose that by the Tower-MacDougal method there could be added to its other excellences the quality of not being edible by the potato-bug, a quality already possessed by the vast majority of plants. That would make even Burbank's earliest triumph seem very literally "small potatoes!"

THE PRIORY CAR IN THE LIVERPOOL PAGEANT

ENGLISH HISTORICAL PAGEANTS

OPEN-AIR CELEBRATIONS IN HISTORIC SPOTS, WITH AS MANY AS 5,000 LOCAL PERFORMERS AND 40,000 SPECTATORS

BY

GEORGE TURNBULL

THE historical pageant now occupies a large place among the entertainments of the English summer season. It is a comparatively new idea. It dates only from the year 1905, when Mr. Louis N. Parker produced at the little town of Sherborne, in Dorset, a home-made play which attracted the attention of all England for the perfect organization which secured its striking spectacular effects. Sherborne, the first genuine folk-play in England, discovered the capacity for pageantry in the English people if properly handled. Warwick followed and emphasized the value of the discovery. The great fact that in the grounds of Warwick Castle a pageant-Queen Elizabeth spoke the actual words on the actual spot upon which the original queen uttered them more than 300 years ago, sank deep into the minds of local historians elsewhere. Had Sherborne and Warwick been failures, there would have been no extension of the taste for pageantry to other English towns. But they were beautiful, dignified, impressive, immensely successful. A passion for pageantry took hold.

QUEEN ELIZABETH AT ST. MATTHEW'S FAIR

MAY-POLE DANCE OF THE ISLE OF WIGHT PAGEANT

During the past summer there were half-a-dozen pageants on a considerable scale, and on the whole they were remarkably successful in spite of some unfavorable weather. Oxford's was in the main a pageant of the University. Lord Curzon, Lord Methuen, and Mark Twain witnessed the first day's performance. The site was on the playing fields of Magdalen College School, and between two arms of the River Cherwell. Battlements which looked real, and poplars, elms and aspens which were real, formed an admirable background for the scenes, which ranged from Saint Frideswide in 727 A. D. to George III. The Oxford "book" was of course the most literary of all the pageant books. Mr. Laurence Housman wrote the Saint Frideswide episode, including the surrender of the city to the rebels in 1646. Mr. A. D. Godley showed a lusty town-and-gown row on St. Scholastica's Day in 1354. Mr. Stanley Weyman depicted the expulsion Fellows of Magdalen by James II.; and th Bacon episode was treated by Professor with what some thought a vulgarizing, and thought a delightful, touch of farcical c — for he gave Roger Bacon a penny-slot machine, a motor car, and a pate Messrs. A. T. Quiller Couch, Walter R Laurence Binyon, and Miss Elizabeth worth were other contributors to the boo sides Mr. Robert Bridges, who wrote an tation to the Pageant" and bade us love C

CHARLES I. RECEIVING HIS QUEEN
A beautiful scene in the Oxford production

"Love her, for that the world is in her heart,
Man's rude antiquity and doubtful goal,
The Heaven-enthralling luxury of art,
The burden'd pleading of his clay-bound s
The mutual office of delight and dole,
The merry laugh of youth, the joy of life
Older than thought, and the unamending strife
'Twixt liberty and politic control."

Yet everything was not done by local people at Oxford. Mr. Beerbohm Tree and Mr. Arthur Bourchier, among London actor-managers, took a friendly interest in the pageant. A considerable number of the performers were persons who lent their services from motives of social connection and personal friendship. Though rain on three days out of six kept away many who had intended going to Oxford for the pageant, it was a success financially. The profit will be distributed among charities.

Simultaneously with the Oxford pageant, Romsey, in Hampshire, eight miles from Southampton, was holding one, which was witnessed by 25,000 people and resulted in a profit of $3,500 for the restoration of Romsey Abbey. This pageant was produced by the Shakespearian actor, Mr. F. R. Benson, the performers being local people, and the costumes and properties being made locally. It consisted of ten episodes, around the not very sensational history of the Abbey, which was founded by Edward the Elder in 907 A. D. The murder of Ethelwold by Edgar the Peaceful, who wanted his wife Elfrida, was one of the few dramatic incidents. The pageant was played on the grounds of the Broadlands Estate which was visited by James I. His visit was the theme of one of the episodes, in which a lineal descendant of the Mr. St. Barbe, who was then owner of Broadlands and entertained the King, took part. And another King, Charles I., whose meeting with his queen was one of the most pleasing groups of the Oxford pageant, was here shown passing through Romsey on his last journey from Hurst to London. Canon Skrine, the Vicar of Romsey, and Miss Anderson-Morshead wrote the "book" of this rather quiet and uneventful pageant, which was witnessed by Princess Louise and the Arch-

A TOWN-AND-GOWN RIOT OF 1354, AS REPRODUCED AT OXFORD

Among the spectators of this production were Lord Curzon, Lord Methuen, and Mark Twain

bishop of Canterbury. Another quiet pageant was held not far off, at the village of Porchester, four miles from Portsmouth. King Henry I. founded the Augustinian Priory here in order that the monks might say mass daily for the souls of the Conqueror and William Rufus. Porchester gives the title of Baron to the Earls of Carnarvon, and owns one of the most interesting castles to be seen in all England.

Two thousand performers took part in the Bury St. Edmunds pageant last July. The advertising began in February, and in a fortnight 2,300 seats had been sold. This, the most elaborately conceived and executed of the year's pageants, was played within the precincts of the ruined monastery in the quiet market town. King Edmund gave Bury its fame by sacrificing himself to the vengeance of his people, thinking thus to save them from the Danish invaders. He was canonized. The gorgeous shrine of St. Edmund in the pageant stood within a few yards of where stood the veritable shrine which Edward the Confessor approached, walking barefoot, and at which Richard Coeur-de-Lion offered his devotions before and after his expedition to Palestine. The Abbot Samson of the pageant—the hero of Carlyle's "Past and Present" — moved where his sturdy prototype must daily have been seen; and the twenty-five barons assembled to swear to extort Magna Charta from King John within a few feet of the spot on which the original barons met. From Boadicea and the Romans downward, the pageant told a continuous story. Shakespeare was the model for the sixth episode, in which were seen Henry VI. and Queen Margaret on a visit to Bury, and the arrest and murder of Humphrey, Duke of Gloucester. The first of the seven episodes began with the year 61 A. D., and Elizabeth and her retinue came into the end of the story in 1578.

A TOUCH OF FARCICAL COMEDY AT THE OXFORD PAGEANT
One of Oxford's greatest sons, Roger Bacon, was given a brazen head and burlesqued in other ways

A TOWN DATING BACK TO THE DRUIDS

St. Albans followed with a pageant covering the period of 1,500 years from Julius Cæsar to Queen Elizabeth. It was vivid with a dashing

battle scene from the Wars of the Roses, and with many another realistic display. In the first episode the Druids are about to sacrifice a beautiful maid to appease the wrath of the gods, as shown in the continued misfortune of the British arms against the Romans. Her lover's appeal is rejected, and he snatches her from the priests, whose surprise is interrupted by the arrival of Cassivelaunus, followed later by Julius Cæsar and his army. The second episode was the sacking by Boadicea of the Roman city of Verulamium, over whose buried ruins the pageant was taking place. The Roman women lament their lot in a pretty chorus. Boadicea suddenly appears driving a captured Roman chariot. "Rome shall perish!" cries the warrior queen, and the barbaric Britons shout their accord. But they fall a prey to panic. A messenger rushes in declaring that all is lost; the tramp of the well-drilled Roman army is heard; there is a gleam of helmets and weapons. The Queen makes a desperate call for a last stand; but it is too late, panic has overtaken her host, and she is left with four devoted chiefs, to whom she gives her last instructions before dying by poison rather than fall into captivity. In another episode King Offa arrives at St. Albans to found the Abbey as a penance for the murder of Ethelbert, and a solemn effect is produced on the opening of St. Alban's coffin, with monks, courtiers, and ladies bowing their heads to the ground. Again, at the funeral of Queen Eleanor, the monks in their copes formed part of the procession that accompanied the bier; the ladies were astride their horses, according to the custom of the times; the knights and nobles and all the funeral train were correctly apparelled; and the hearse, behind which rode the King as chief mourner, was decorated with cloth of gold and armorial bearings.

QUEEN ELIZABETH IN THE ST. ALBANS PAGEANT

Princess Henry of Battenberg, Governor of the island, inaugurated the Isle of Wight pageant, which was held on the old Place d'Armes — formed out of the ancient British earthwork and later converted into a bowling green of Carisbrooke Castle. The first tableau dealt with the conquest of Wight by Vespasian in A. D. 43, and the last with King Charles's captivity in Carisbrooke Castle. One

HENRY VIII. RECEIVING CARDINAL WOLSEY AT OXFORD

THE BODY OF GLOUCESTER BROUGHT BEFORE HENRY VI.

of the most fascinating of the scenes was a May-pole dance by Isle of Wight children. Mr. F. R. Benson was master of this pageant also. Over 1,000 performers took part in it. Instead of, as was hoped, a handsome sum being handed over to benefit the Royal Isle of Wight County Hospital, the guarantors were called upon to meet a deficit of about $2,500.

LIVERPOOL'S SEVEN-HUNDREDTH ANNIVERSARY

Liverpool, first among British cities thus to illustrate history, followed with a splendid pageant in honor of the 700th anniversary of the founding of Liverpool. Not counting the bands, there were 4,500 performers trained for the proceedings, including 2,000 school children. About 1,400 historical characters, mounted and on foot, had to be taught their parts. Special odes and music were composed — including an anniversary ode by William Watson — ten symbolical cars and a royal litter constructed, and innumerable trophies and banners made. Forty thousand people were able at one time to witness the display from Wavertree Park. Liverpool's official history dates from 1207, when King John granted his letters-patent. Its progress from an obscure fishing hamlet on the banks of the "Lyre-Pool" to a foremost position among the progressive cities and ports of the world was presented in twelve periods. When King John made Liverpool a free borough and invited his subjects to take up "burgages" — plots of land — in the little hamlet, the Mersey was an insignificant stream, used for the most part by a few fishermen and the monks of Birkenhead Priory, skilled oarsmen, whose Benedictine Home had been established on the opposite Cheshire shore in 1150 by Hamon de Masci, third Baron of Dunham. King John, riding in the royal car, was followed by a car representing Birkenhead Priory, accompanying which were monks chanting Gregorian music. Coming to the Stuart period, the most interesting feature was the car representing the surrender of Liverpool to Prince Rupert. The beginning of Liverpool's commercial greatness and its reputation for charitable deeds, the days of the Privateers, the Slave Trade, the opening of the city's first canal and England's first dock, were succeeded by the last period — 1907. This showed the flags of the foreign countries and of the British colonies and dependencies with which Liverpool trades, the Car of Charity, and the Grand Car of Liverpool, whereon was enthroned the goddess of the city, crowned with laurel leaves and supported by Britannia, Erin, and characters symbolical of literature, science, art, music, and the trades and industries of the city, with house flags of Liverpool's shipping lines bringing up the rear.

MORRIS DANCERS AT ST. MATTHEW'S FAIR
The dance of the children was a popular feature of the Bury St. Edmund's Pageant also

Beside Liverpool's effort, the pageant at Coventry was a small matter. Indeed, it were better called a town's procession than a pageant, in the modern English sense of the word. Through six miles of streets passed a procession

THE FUNERAL CORTEGE OF QUEEN ELEANOR REACHING ST. ALBANS

whose chief attraction was La Milo, the music-hall artist, in the character of the legendary Mercian Countess, Lady Godiva. La Milo had offered her services, as the proceeds of the pageant were to be given to the hospital. Discussion on the delicate question of the proper dress of Lady Godiva's twentieth-century representative had long preceded the pageant day. But it was arranged happily. She rode a white horse, and was clad in fleshings and flowing white drapery, over which her hair hung in a golden stream. A corps of the Legion of Frontiersmen, a peculiar "Bohemian" force of British dare-devils, formed Lady Godiva's bodyguard, and everywhere she was loudly cheered. Otherwise, the procession was a town and trades one, with the addition of characters representing all the kings who had visited Coventry in past ages, local public benefactors dead and gone, and a living representation of Shakespeare, who is linked to Coventry as a Warwickshire man. Falstaff also was a conspicuous figure. Coventry Hospital benefited by about $2,500. The pageant was carried out by local effort, but costumes and other things were secured from London. This procession has been held at intervals since 1842. Elsewhere, throughout the country, during the past summer, there were many minor evidences of the influence of the greater pageants.

There have been two types of English pageants. First, the genuine folk-play, in which everything is done by the people themselves, directed by a real Master of the Pageant, who keeps carefully out of sight of the audience. Second, the magnificent — or tawdry — show in which many of the performers are professional actors, the music is composed by men of standing, and the costumes are designed by great artists or lent by London theatres. Discipline was notably lacking in some cases; the performers came and sat on the grand stand when they had done their parts; the band, the conductor, the Master of the Pageant, were all visible to the audience, the "Master" taking his "call" like any actor-manager.

THE RIDE OF LADY GODIVA THROUGH COVENTRY
This pageant has been held at intervals since 1842

THE LASTING INFLUENCE OF PAGEANTS

The general educational value of the pageants — it is of course far and away greater in the case of the first type — is enormous, alike to those who witness and, especially, to

CAIA SINGING TO FAUSTINUS AT A ROMAN FEAST

The pageant in the ancient Suffolk town of St. Albans realized a net profit of $6,000

BOADICEA ATTEMPTING TO RALLY THE DEFEATED BRITONS AT ST. ALBANS, A. D. 61

KING OFFA AND THE BONES OF THE MARTYRED ST. ALBANS, A. D. 793

those who take part. Mr. Parker's experience on the latter point shows that it is not the week or fortnight of performance which counts; it is the twelve or eighteen months of preparation. Twenty ladies each gather twenty around them, and the women's part of the labor is planned. Men and women of all classes have to study, to invent, to design, to make clothes, boots, hats, armor, weapons, properties of every period. They never heard of them or thought about them before; now they have to learn how to make them, how to use them, how to wear them.

THE CONQUEST OF THE ISLE OF WIGHT BY VESPASIAN

This pageant illustrated the Isle of Wight's history from A. D. 46 to the departure of its troops for the Bo

They have to learn how to hold themselves, how to move, to walk, to run without being ridiculous, and above all how to speak so as to be heard, without shouting. The people who do all this get a sense of discipline, of obedience, of drill. They get a feeling of consideration for each other, of self-sacrifice, of the suppression of personal vanity, which lasts them all their lives. Also a great wave of unity, of brotherly love, of civic enthusiasm, civic pride, passes across the town, leaving its mark long after the pageant is over. In the words of Mr. Parker, who does what he does with reverence and with an earnest and sincere desire to foster patriotism and loyalty, "the old-fa idea of a Providence shaping our ends l tangible 'and visible.' " In the sam Canon Glossop informs me that "th thing the St. Albans pageant has do enlarge our minds, and to remind though we may have our troubles and a and disputes to-day, the world has n still but is a better world to live in now to the efforts of those into whose la have entered, than ever it was before. reminded us all that honest efforts th resulted in apparent failure have pro seed from which abiding benefits have s

There is an idea abroad that Mr. P making money by organizing page England. I know that it is not so. I hazard the suggestion that his incom have decreased since he took up this wo

DOVER'S FORTHCOMING CELEBRAT

All the arduous work of preparati cribed above is being undertaken en tically by the people of Dover at the moment. Mr. Parker has made a rule in hand only one pageant each year.

summer it will be Dover. This pageant, in a city which can boast associations with Julius Cæsar, William the Conqueror, and St. Augustine, will have some new features. Its keynote will be the sea. First a symbolical and mythical scene will introduce King Arthur, the battle of Barham Downs, the death of Gawayne, the embassy from the Roman Emperor claiming suzerainty, and Arthur's defiance. Then the Knights of the Table Round become the narrative chorus, and the pageant proceeds with history proper — introducing William the Conqueror, the founding of the Priory, John, Peter the Hermit, John's submission to Pandulf, the Barons' War, Hubert de Burgh, the founding of the Maison Dieu, the Siege of Dover. Edward I. and Eleanor will come home from the Crusades. Henry V. will land after Agincourt and woo his Kate. There will be all the quaint procedure of a Court of Shepway. Henry VIII. will found the new harbor, meet Charles, and sail for the Field of the Cloth of Gold. Incidentally, the friendly relations of France and England to-day will be linked with the past, for the scene in which Charles I. meets Henrietta Maria is to be written by the French poet, Louis Tiercelin, and acted in French by citizens of Calais. It is a new use for the Dover-Calais route to Paris, which has disturbing memories for so many visitors to Europe. In the final tableau, the fair daughter towns of Dover in America and Australia will stand with the mother town as the central figures, whom all the performers shall acclaim.

Organizers of pageants in the future should realize what a call is made on a town's enthusiasm, zeal, and self-sacrifice, and what an enormous amount of work the townspeople have to do without any question of payment at all It was estimated by the London *Times* in the case of the Bury St. Edmund's pageant that the voluntary work, in conjunction with the necessary outlay, represented a total cost of $500,000. The number of places in England that can with any hope of success initiate such a scheme is extremely limited. Moreover, it is not every town that could find locally so many and such skilled workers as Sherborne and Warwick, Bury St. Edmunds and Dover and St. Albans. Besides the great one at Dover, Chelsea (this will be the first in London) and Winchester will hold immense pageants next year. Norwich, Kingston-

THE SWEARING-IN OF THE BAILIFFS OF NEWPORT

A scene in the Isle of Wight pageant, with its historic natural setting

on-Thames, Hastings, Rochester, Bedford, Runnymede, Colchester, and Tiverton are all in the bill; York and Bristol are already spoken of for pageants in 1909; and a suggestion is made for a great pageant of the Law to be held in the Temple. There are in England a limited number of places that have exceptional historical interest, and these alone can produce a local pageant that can be of any great interest to the world at large. Of course, an exceptional expenditure of money can produce a great show, but unless persons of wealth are prepared to pay very considerable sums to finance pageants, the attempt to achieve success by the power of the purse must fail. In short, if people will be content with smaller pageants, they may be useful and pay their way. If, however, they are to be carried on in a spirit of emulation and by places of less historical interest, many thousands of dollars will be spent and the idea will either be given up altogether, or will be taken up professionally by people who can carry on the shows for such a length of time and at such popular prices as to insure financial success.

Apart from the educational value of the enterprise, an extraordinary amount of talent is unearthed in the process of preparing a genuine folk-play. In the greatest of the pageants, for instance, Sherborne, Warwick, and Bury St. Edmunds, the music, which in every case was praised by professional musical critics, was the work solely of genuine inhabitants of the town, none of whom had previously published a note. Yet to show conclusively how difficult it may be to make a pageant pay even with such favoring conditions, let me recite the circumstances of St. Albans. The object of the promoters, who worked with a guarantee fund of $20,000 (raised by the Marquis of Salisbury and others) behind them was to give a purely historical pageant with al

THE CHARTER CAR IN THE LIVERPOOL PAGEANT
With King John presenting the Charter to the city

possible accuracy, and to confine the episodes to events which authentic records declared actually to have happened within the city boundaries. They decided to do everything locally — except that they engaged a professional actor as Master of the Pageant, and secured the services of the York Herald to insure the accuracy of all heraldry. The composer of the really excellent and singularly appropriate music was born and bred in the town. The composer of the book of the words was an old resident. In Canon Glossop, the pageant was blessed with a secretary who not only put his whole heart into the business, but who could exert in its support that species of society influence which, even in these growingly democratic days, a cultured dignitary of the Church of England holds as no one else does in the rural places of England. The designers and workers of the arms, costumes, banners, etc., were local people, and so were all the performers. The pageant ground was the actual site of the place which Julius Cæsar found to be the most important town in Britain and where he dictated terms of peace nearly 2,000 years ago. Boadicea died there, and from it Alban, the first English martyr, was led forth to execution. Everything possible was done to keep down expense. Hundreds of people of all classes worked for the pageant, not only without wages but without even payment of expenses. Brilliant weather favored the pageant; it was excellently served by an appreciative press; it was supported by the County of Hertford; and it was held within half an hour's rail journey of London — by far the nearest to London of all the pageants. Yet it was all that St. Albans could do to make both ends meet. To get back something like $50,000 in a week out of limited audiences is a very great matter to attempt in England. All your spectators must be on one side of your ground. You cannot have a circle of benches as at a cricket or football match. If people want to see a living picture of Boadicea, they do not want a background of twentieth-century spectators in twentieth-century costume.

PAGEANTS AN AMERICAN POSSIBILITY

The interest of American visitors in the English pageants has been a great factor in their success. For the Oxford pageant alone, nine-tenths of the expensive seats booked beforehand in London were engaged by Americans. Mr. Parker, the originator of the

THE CAR REPRESENTING THE SURRENDER OF LIVERPOOL TO PRINCE RUPERT

pageant idea, is himself half an American, his family having belonged to one of the oldest Boston families. I asked him what he thought of the possibility of there being organized in the United States such pageants as have taken place in England. He replied that Boston or Plymouth — to mention only two towns — could have, as far as site and history go, as stately and splendid and interesting pageants as any English town. "For example," he said, "a Boston pageant would begin with the history of Boston in England, and you would

KING EDGAR, "THE PEACEFUL"
As represented in the Romsey pageant

see the forces at work and gradually accumulating which drove the English Bostonians on their tragic pilgrimage across the waters. Then the Indian wars; the cold; the famines; the Tea Party; the War of Independence; and finally the triumph of New Boston. It would be superb, if it were done by the citizens themselves." This reminds me that much of the success of a pageant depends upon the social conditions. In England Mr. Parker has secured an extraordinary commingling of peer and peasant, *grande dame* and seamstress, and the clergy of all denominations, to act. In all his pageants there have been Church of England dignitaries acting, and acting side by side with dissenting ministers. The latter have played Roman Catholic clerics! At Bury St. Edmunds, sixty clergymen acted. Richard the Lion-Hearted was represented by a country squire, and the knight who played an equally important part by his side was a coachman.

The occurrence of this pageantry in England, with its ancient Britons in garments of skin, its Morris dancers, its multiplicity of ancient fashions and dresses and armor, and the fusion of the classes which it all represents, suggest the presence of a new social period the evolution of which would be an interesting study by itself. For some years past it has been foretold here and there that England was gradually going to become simply a place for providing amusements, sports, and historical sights and shows for the English who live over-seas. The suggestion comes usually from outside of England, and finds little sympathy inside from those who watch the still steady expansion of England's trade and the increasing keenness of its manufacturers and business men in the markets of the world. Certainly England is providing more amusements and historical shows for its welcome visitors from the States and the Colonies, and it is a fact also that the great London shops depend chiefly upon Americans for the trade they do in the Londoner's holiday month of August. But it is as an "extra" attraction, meanwhile, that England is making of itself a show place. I asked Mr. Parker, who has an unrivalled knowledge of English history, what he thought about this, but he did not go further than to suggest that perhaps there will be an interchange of courtesies: the Americans will go over to see England's old things, and the English come across to see America's new ones.

THE GRAND CAR OF LIVERPOOL
With a banner presented by East Liverpool, Ohio

parts of the world come to see. The lilac collection is superb. The city maintains an excellent free toboggan slide here in winter. Genesee Valley Park covers 340 acres of undulating lawn and woods, over which sheep, deer, and elk wander at will. A fine swimming-pool, ball-grounds, golf links, a band-stand in which free concerts are given in summer, make this an ideal vacation place for all who cannot leave the city. These are but a few of Rochester's parks. Its system is so excellent that park commissioners from all over the country come to study it.

Brown's Square, with its children's wading-pool, its basket-ball, tennis, and baseball grounds, is Rochester's first attempt to provide playgrounds. An abandoned quarry, sold for taxes, was bid in by the city and will make another playground. The third has been established at No. 9 School, and the mayor has recommended the purchase of a block of land in another thickly populated part of the city for a fourth. The municipal bath-house has a swimming-pool in which 621 boys have been accommodated in one day. The number of baths in 1906 was 70,000.

GUARDING THE CITY'S HEALTH

A movement to provide distributing points for pure milk, besides a model dairy farm from which they are supplied, reduced the number of deaths among babies during July and August by 123 a year.

The garbage question was also troublesome. The city garbage was formerly hauled out of the city at the rate of $4 a day for each team, which hauled two loads. The mayor asked to have a garbage-reduction plant established in the city. The contractors tried to influence the aldermen to take advantage of an old ordinance meant for another purpose, and exclude the reduction plant from the city. It would cost $10,000 a year more to handle the garbage if the plant were built outside the city, and that amount would go to the men who hauled the garbage. The contractors succeeded at first. Then (and the mystery is why it happened just at this time) the farmers all around Rochester raised a loud protest against a reduction plant being established outside of the city. There was nothing now for the aldermen to do but to locate the reduction plant within the city, which was done. Moreover, plans are now being made for a large sewer to carry all of Rochester's sewage direct to Lake Ontario, instead of allowing it to flow down the Genesee River and become a public menace.

REDUCING THE COST OF ELECTRICITY

The city was paying the Rochester Railway & Light Company $78.50 for single-arc street lights, and private consumers paid $1 a thousand for twenty-candle power gas, and 14 cents per kilowatt hour for electricity. The mayor had two experts come to Rochester, examine the plant, and figure on the amount that the city ought to pay for light. The expert named $58 as a proper price for single-arc street lights. Then the mayor arranged that another company should be granted a franchise and thereby be enabled to file a competitive bid. He also asked the State Commission of Gas and Electricity to investigate both companies and to see if there were a collusion between them. He then announced that he expected to receive a bid below $58. The old company then put in a bid for $57.95 for single-arc street lights, and the mayor closed a contract for five years, saving the city tax-payers $300,000. But the private consumer was also benefited. The State Gas Commission came and Mayor Cutler's expert submitted a report showing what gas and electricity *should* cost the private consumer. The State Commission, following his report, ruled that his estimate of prices should prevail. The private consumer now pays five cents per thousand less for twenty-candle power gas, and eight cents a kilowatt hour for electricity instead of fourteen cents, an estimated saving to the people of $100,000 a year.

GUARDING THE CITY'S MORALS

The mayor's method of dealing with the vice problem was shown in the case of a women's wine room, a veritable palace of sin. The mayor asked one of his police captains to get evidence that the place was disreputable, and the captain did so. The mayor sent two other officers to the place on a certain night with orders to arrest the proprietor, who had powerful political influence. The officers made no arrest and reported that nothing wrong was going on in the place. But the mayor had private detectives in the saloon at the time the officers were there, so he sent two other officers the next night and the proprietor was arrested. He was tried twice, and the jury disagreed each time. The district-attorney then came out with the statement that he would continue to try this case until he succeeded in getting a jury

honest and intelligent enough to convict, or vile and ignorant enough to acquit. The third trial resulted in a conviction and the dive-keeper went to the penitentiary for 500 days. Others of his kind became frightened and left the town.

The mayor also secured the conviction of several saloon keepers and sent transcripts of their conviction to the Deputy Commissioner of Excise, asking that the broken bonds be declared forfeited. That official sent back a long letter and ended by asking the city for better evidence. The mayor answered: "You will excuse me if I say that I am unable to see what better evidence than conviction after trial can possibly be furnished." The correspondence was published far and wide, making the commissioner very uncomfortable. The bonds were declared forfeited.

IMPROVING TRANSPORTATION SERVICE

When Mr. Cutler took office, the street car service of Rochester was exceptionally bad. He asked for the schedules of the company and employed an expert to determine how many cars the company should run to accommodate the traffic. Then he gave the company notice early in 1904 that, beginning with the next fall, it should run fifty-six more cars and should discontinue the use of all old summer cars and of all dirty cars. The notice was sent long enough in advance to enable the company to have time to prepare. The mayor also gave notice to the company that the running of freight cars in the streets during prohibited hours must cease. Then, by careful search, he found that there were more than fifty streets encumbered with unused franchises which had been useful in keeping out competition. The mayor caused proceedings to be started in the courts to recover to the people an unclouded title in and to those streets.

He also found that, while the stock and bonds of the company were valued at more than ten millions of dollars, the State Tax Commission's assessment was upon a valuation of about two millions — and the company was fighting in the courts to reduce this valuation as excessive. After persistent effort, the mayor succeeded in getting some figures before the State Tax Commission and asked for an increase in the assessment. He also caused to be started an action against the railroad company to determine whether the city could not charge the company its proportion of the expenses of paving that portion of the streets between the tracks ar feet outside. The action would give th the right to collect for all past as well future paving, and the amount of mon volved was tremendous.

The leading stockholders of the com long used to having their own way wit officials, were indignant; they denied the of the city to interfere with its business.

But when the company ran freight car the centre of the city, the mayor cause arrest of the conductor and motorman ar the cars to block the company's traffic. He actions and annulled the company's u franchises to sixty-two streets. He secur *increase* of five millions (more than 200 the assessment of the company's franc He also won his action in the highest cou compel the railroad company to pay proportion of the expense of paving the s between the tracks and two feet ou When, lately, the company officials w more franchises for new lines, they seem expect, as a matter of course, they would to pay for them.

Mayor Cutler has won the confidence Democrats, although he himself is a Re can. He did not seek a re-nomination the leading Democrats of the city joined wi leading Republicans in begging him to be a candidate again. "Some of us ar members of the party which desires to you again in nomination," wrote the Demc "and many of us are indifferent to pa considerations in this connection, but all recognize the imperative need of a man o character and attainments at the head municipal government." He consented again,and the president of Rochester Univ Rush Rhees, nominated him in the conve

He is now nearing the close of his s term and is about to retire. Mr. James son Reynolds, the President's special missioner, who investigated packing-hous ditions and whose report resulted in the pa of the new meat inspection bill, says th would like to see the time come when sucl might be advanced from city to city i business of governing municipalities. idea is followed in Germany. The p mayor of Berlin was formerly mayor of L and also of Düsseldorf. If such a system followed with regard to Mayor Cutler others like him, the reproach of bad government would soon be taken away.

HOW WOMEN WAGE EARNERS FARE

WHO THEY ARE, WHERE THEY LIVE, WHAT THEY ARE DOING, AND WHAT PROGRESS THEY ARE MAKING

BY

IRENE VAN KLEECK

A STUDY of the detailed facts about working women which has just been published in a special report of the Census Bureau shows some tendencies both significant and hopeful.

In the United States five million women—one out of every five women sixteen years of age or over—work for wages. The majority of them are unmarried women, living at home. Most of them were born here; less than one-fifth came from across the seas; more than a million are Negro women. One in seven is married, and one in six a widow; only a small fraction, according to statistics, are divorced.

The map on page 9688 indicates their geographical distribution. These eleven sections of the United States, it may be seen, are divided so as to show certain representative differences in conditions of settlement, industrial development, and social life. In New York, Pennsylvania and New Jersey, with New England a close second, one finds the largest number of women workers; the fewest are in the Rocky Mountain and Desert States. The high percentage found in North Carolina, South Carolina, Georgia, and Florida, and in the South in general, is on account of the larger number of Negroes, most of whom belong among the laboring classes.

Naturally they must live where they work; and the nature and variety of occupation open to them in cities, especially in manufactures and trades, attract the larger number, even of the younger native women, to these centres; for the foreigner and her children there is usually little other choice. Two-thirds of the women working in cities live at home. This is largely true of the foreign-born and their families; naturally the girls who come into the city from the country must board. Few live in the suburban towns, as commuting is apparently more disagreeable and fatiguing to them than it is to men, and they can live more comfortably either in small groups in apartments or singly in boarding-houses. St. Paul, Minneapolis, Lowell, and Boston, in the order named, are notable boarding centres for women; and so is Washington, because of the large number of women employed in the government offices.

It would be hard to say what a woman may not do; for straightway, of course, some daring soul would strive to achieve renown or die in the attempt by proving that she could do what

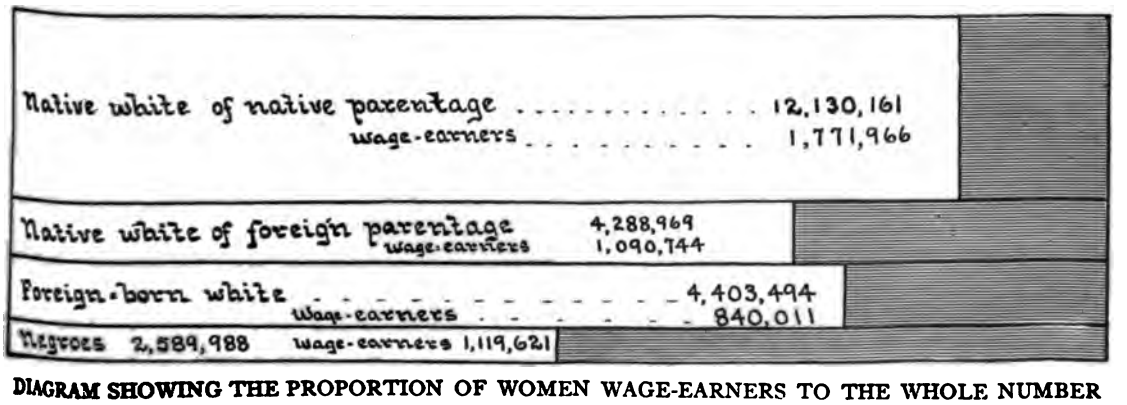


DIAGRAM SHOWING THE PROPORTION OF WOMEN WAGE-EARNERS TO THE WHOLE NUMBER OF WOMEN, GROUPED ACCORDING TO PARENTAGE

The shaded part represents the wage-earners

had been denied. Therefore, one is not surprised to learn that a scattering few are to be found in the ranks of pilots, baggage-masters, brakemen, conductors, blacksmiths, carpenters, boilermakers, or in other unusual and perilous occupations. In a little New England town one girl has been for years the only ferryman, quite unconscious of its being at all unusual. Another, under commission from a foreign government, has undertaken to engineer the building of a railroad. Just as widely varying have been the individual circumstances that have influenced or even constrained most of them in choosing to enter such occupations, and they give little heed to exaggerated newspaper stories of themselves and their work. Their number is so small, however, that it cuts no figure in considering the work of women in the United States. Only about a dozen callings employ more than 100,000 women each.

From the threatening proportions assumed

All Occupations	4,833,630
Government Officials	8,119
Literary and Scientific	5,984
Artists and Teachers of Art	10,907
Physicians and Surgeons	7,387
Musicians and Teachers of Music	52,010
College Professors and Teachers	327,206
Bookbinders	14,303
Boxmakers (paper)	14,498
Gold and Silver Workers	5,767
Rubber Factory Operatives	6,945
Packers and Shippers	17,052
Saleswomen	142,265
Janitors and Sextons	8,010
Cotton Mill Operatives	97,181
Small Shop Keepers	33,825
Tailors	61,571
Woolen Mill Operatives	27,169
Agricultural Laborers	456,405
Laborers (not specified)	106,916
Laundresses	328,935
Servants and Waitresses	1,165,561
Agricultural Proprietors	307,706
Barbers and Hairdressers	5,440

SOME REPRESENTATIVE OCCUPATIONS OF AMERICAN WOMEN

The figures show the number of women at work; the diagram shows their parentage, the sections being arranged in the following order: (1) native white of native parentage; (2) native white of foreign parentage; (3) foreign-born white; (4) Negroes, Indians, and Mongolians.

by the servant problem, one might not imagine that something over a million serving-girls were to be had for the finding—but we are assured that such is the case; more than half of them are foreigners and Negroes, in nearly equal numbers. Of the half-million known as farm-laborers, more than three-fourths are the Negro women of the South; many of them work their own small pieces of land, but most of them are tenants or are employed in the fields, where the recent high prices of cotton have made day-labor more profitable than it ever was before. In all parts of the Union the surprisingly large number of widows who are farmers speaks plainly of their effort to keep for their children the land they have helped to buy and till.

Dressmakers and laundresses are quite generally able to do their work in their own homes, while teachers are usually obliged to seek positions and boarding-places outside. Of the six leading occupations entered by working-women in large numbers, all but one, teaching, are adapted to home life; and teaching has been so long considered a woman's work that its normal moderate increase among women should not alarm the most conservative.

THE CHANGES OF A SINGLE DECADE

It is interesting to note the changes in the last decade, so far as these figures indicate what kinds of work women are turning to, and what gains different classes are making industrially and socially.

Women whose parents were born here, who may be expected to have a certain heritage of ability and training, with perhaps a small amount of property, fill positions which demand technical knowledge and special fitness as well as a good general education. They become librarians, writers, teachers, musicians, agriculturists, and so on.

Women born in foreign countries, ignorant of American customs and backward in acquiring a new language, are unable to fill any places except those for unskilled labor. They are usually middle-aged and married, and when they go to work become janitors, cleaners, workers in cotton and woolen mills and tobacco factories, seamstresses, or owners of a small shop business. The background of their lives is a memory of another land—the land of their earlier home, with the ideals, hopes and fears which have shaped their lives. Immigration to America has perhaps improved their material condition, but it has made little other difference in their home and their social status. For the most part they must remain as they came—shy, timid little women, with their strange, soft speech, strong, squat bodies, and foreign dress. Of New England methods of housekeeping they are blissfully ignorant; their marriages have been arranged by sharp commercial bargains among their men-folk; and rarely do they acquire any other mental outlook than that which the custom and tradition of their native country has decreed for them. Upon them falls their accustomed load of heavy physical labor, homesickness, and sacrifice—and the much more perplexing problem of bringing up an alien family of children; for, whether aided or hindered at home, their daughters will be inevitably and indisputably American. The hen with her duckling brood could be no more proud and bewildered.

Their daughters go to the public school, forget their mother's native speech, adopt the newest "wrinkle" in dress, and physically and mentally become so Americanized that their aunts and uncles on the other side could not recognize their transformed relatives. They possess confidence and self-reliance, and develop initiative quickly.

And they choose new lines of work. They take up work in department stores, bookkeeping, stenography, clerking, operating telegraph and telephone exchanges, dressmaking, and, in general, occupations which require skill and dexterity with a fair knowledge of English and the ability to understand what they are really about—qualifications which the older generation did not possess. And it is in these occupations—of those employing large numbers of women—that the greatest proportionate increase has occurred in the last ten years.

This would seem to be most encouraging in view of the vexing problems of immigration, amalgamation, and concentration in cities. For it is largely these girls, most of whom marry before they are twenty-five, who will help make within a few years the home life of American cities—who will erect the standards and shape the ideals both of another generation and of the increasing numbers of foreigners who are being adapted to life here and who will seek to follow in the footsteps of their countrymen's children. Thus, in one generation, a change has been wrought such as is impossible in most countries; and the

mobility of opportunity in America for all classes, which is the hope and the wonder of older lands, works its leaven.

However much may yet be desired, and whatever serious faults may be easily seen, the undeniable fact of this amazing progress should serve as an incentive to firm faith in the advancement of the general good and a realization that lending a hand toward this end will result in something more than attempting to empty a well by baskets—that it is working with the current instead of against it.

THE WORKING WOMAN'S OUTLOOK

Does it seem likely that a woman will have a better chance ten years from now to earn her own way than she has to-day? If so, in what occupations, with what requirements and under what conditions? For it is probable that the number attempting to do so will grow rather than lessen, and this makes the matter worth considering.

The table opposite indicates the changes in number and percentage of increase for about fifty occupations during the ten years from 1890 to 1900. Some of these find a ready explanation; others are due to varied, inconspicuous causes.

Most notable, perhaps, considering the number employed, is the increase, over 305 per cent., in the importance of stenography as an occupation for women. Since 1890 the typewriter has been developed to its present high grade of efficiency, and instruction in stenography may be obtained in the public schools. Both these facts helped to augment the numbers who have taken up this work in the last ten years.

The rapid development of the department store as an institution has afforded an opening for many saleswomen, as it is cheaper to secure women than men for a large store. It is mainly an employment for city-dwellers, and draws largely from the families of the foreign-born the brighter, more adaptable girls who are obliged to leave school early without having had an opportunity to acquire any professional or technical training, but who prefer going in a store to working in a factory. For these girls the trade and industrial night schools, public and private, offer training which may be utilized to acquire skill and better wages and conditions of living.

As to packers and shippers, the advances of industrialism in general, reaching into every corner of the land, and the growth c packing since the perfection of cold-plants, have created a demand for labor which women and girls can p without having been specially trained. glove-making industry is more impor New York State than elsewhere, an peculiar in that over one-half of the output comes from one county (Fulton).

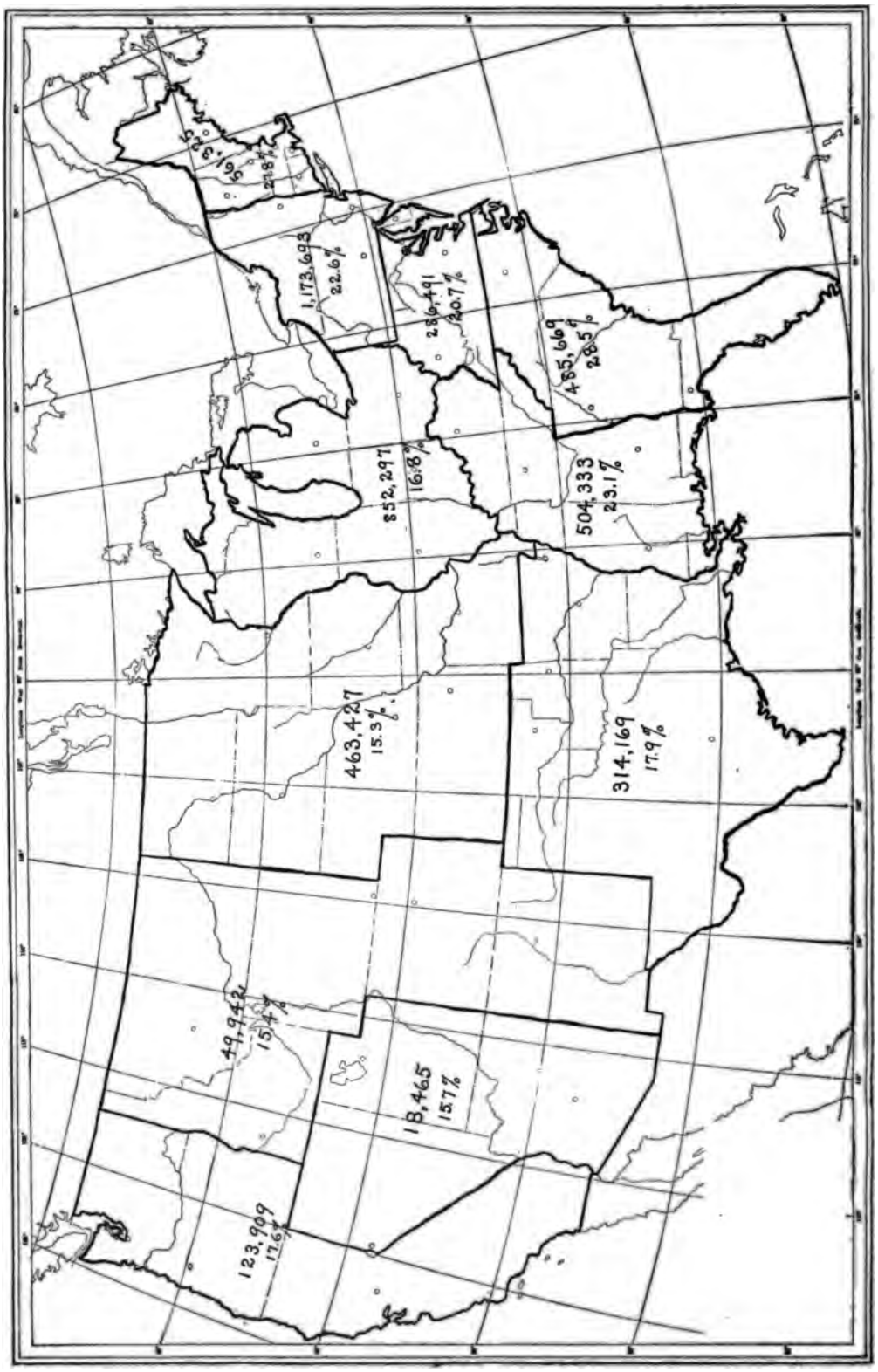
Trade and transportation, as repr by book-keepers, telegraph and tel operators, agents, and other workers is ficant, not so much for the actual nu engaged as for the striking tendency by the increasing proportion of women t toward these lines of work. They rep a middle class in work and training a pared, on the one hand, with those wh up professions and, on the other, with who enter manufacturing or domestic s Their ranks are largely recruited from fa that are steadily growing more prosp and the growing importance of these o tions represents an upward step, and marked one, in the progress of women earners.

The changes in medical science in th few years have made far more prominen desirable the position of the trained and this has attracted many young who were adapted to it and who saw chance for making the most of their ab The "district nurse" is now a perm institution in many cities and even in s towns; and some find their way into the of the Red Cross. Many girls are pos for a time by a dream of a beautiful, untr existence as an angel of mercy, and a at their first contact with actual suf and yet, in spite of its many hardship girls willingly give up after they have begun the training course in a well-equ hospital. Their work holds for them in and variety, and is quite generally well averaging above $3 per day.

The greater number of janitors, whi cludes sweepers, cleaners, etc., indicates th work is being done by the foreign-born of the larger cities in preference to kinds of service. These positions ar exacting in all requirements except ph strength. Nearly two-thirds of the la whose work is not specified are Negro w This perhaps shows that the increasing of opportunity, which has been so noti

OCCUPATIONS	NO IN 1890	NO. IN 1900		INCREASE PER CENT.
All	3,712,144	5,007,069		34.9
Lawyers	208	1,010		385.5
Stenographers	21,214	85,912		305.9
Architects	327	1,037		217.0
Packers, etc.	6,142	18,673		203.8
Clergymen	1,143	3,405		197.9
Janitors, etc.	2,803	8,028		186.4
Bookkeepers	27,606	73,820		167.4
Telegraph and telephone op.	8,403	22,454		167.2
Nurses	41,396	108,978		163.3
Saleswomen	57,171	146,577		156.4
Journalists	888	2,193		148.1
Laborers	50,321	111,503		121.6
Agents	4,853	10,538		117.1
Librarians, etc.	2,764	5,989		116.7
Miscellaneous manufacturing	71,978	150,627		109.3
Glovemakers	3,608	7,543		109.1
Miscellaneous trades	9,058	18,418		103.3
Hairdressers	2,779	5,533		99.1
Miscellaneous textile	10,403	20,024		92.5
Miscellaneous service	8,554	16,346		90.0
Shirt makers	15,534	29,509		90.3
Boarding-house keepers	32,593	59,511		82.6
Hired housekeepers	86,089	147,103		70.9
Government officials	4,875	8,126		66.7
Physicians	4,557	7,399		62.4
Hotel keepers	5,276	8,545		62.0
Tobacco workers	25,853	40,325		56.0
Laundresses	215,121	332,665		54.6
Silk mill	19,108	29,200		52.0
Actresses	4,491	6,819		51.8
Musicians, etc.	34,435	52,257		51.8
Milliners	60,653	85,025		40.2
Farm laborers	363,554	497,886		36.9
Farmers	226,427	307,788		35.9
Bookbinders	11,271	15,171		34.6
Merchants, etc.	25,284	34,008		34.5
Teachers, etc.	245,839	327,905		33.4
Clerks, etc.	62,817	83,726		33.3
Printers, etc.	12,026	15,770		33.3
Boxmakers	12,325	15,992		29.8
Cotton mill	84,220	104,244		24.6
Dressmakers	290,308	342,579		18.0
Boot and shoe makers	32,948	38,285		16.2
Rubber factory	6,331	7,238		14.3
Hat and cap makers	6,552	7,398		12.9
Other textile	43,583	47,484		9.0
Tailoresses	61,488	65,353		6.3
Servants, etc.	1,145,255	1,213,828		6.0
Paper and pulp	8,719	9,164		5.1
Artists, etc.	10,775	10,989		2.0
Seamstresses	143,339	143,270	Decrease	.1
Woolen workers	34,428	28,961	Decrease	15.9
Carpet	10,452	8,679	Decrease	17.0

TABLE AND DIAGRAM SHOWING INCREASE OF WOMEN WAGE-EARNERS, 1890-1900, IN THE LEADING OCCUPATIONS.



MAP SHOWING THE DISTRIBUTION AND PROPORTION OF WOMEN WHO WORK FOR WAGES

The figures give the number of working women in each state, and the percentage of the whole number of women

in the last fifteen years, does not this race for social and economic and its women are mainly limited kinds of work.

e whole, domestic and personal growing less important as employ- the native white working women untry, with causes and effects too ed for a short discussion.

NAL WOMEN STEADILY INCREASING

awyers, architects, clergymen and , the percentage of increase is marked, e were less than 2,000 in each of essions in 1890. Most of the women up law follow its more purely clerical branches, and find it a valuable ich businesses as real estate and One woman has become a noted hority upon patenting mechanical rical devices; many others have l to an equal degree in other branches rofession. The very low rate of among artists and teachers of art indicates that many who twenty would have considered this the tion for the development of artistic w find a more remunerative outlet talent in various practical utilities, painting china and glassware, decnteriors and store windows, and book and magazine covers. This reflects such a difference in edudeals as that shown between the boarding-school, with its smatdrawing, music and French, and nizations as Cooper Union and Pratt with special courses in each depart-

ral there has been a healthy and icrease for women in professional e to the larger opening afforded r variety in the callings that they to enter successfully. The actual re rather insignificant in accounting tal of women workers, but they are class of capable, highly trained men whose work bears the impress lity and thereby frequently comes notice.

opportunities for securing suitable along special lines have arisen o, and this has led to more the distribution of professional eflected by the fact that the rate of increase in teaching is slightly lower than the average for all occupations. A girl who will inherit large tracts of land is now taught to realize that she may find it more to her advantage to study agriculture than to pursue the classics indefinitely. Mr. Carnegie's assistance to public libraries all over the country has greatly increased the number of women who enter this work, and special schools providing technical training for librarians have been established. In railroad offices numbers of women who found it difficult to adapt themselves to rapid changes in requirements and conditions have been retained in charge of special railroad libraries. A woman is now at the head of the general library of one of the great trunk-lines, and directs many assistants in its various branches.

OCCUPATIONS ON THE DECLINE

The occupations that have been considered so far have more than doubled in one decade. From what other industries have they drawn, and has this been fortunate or unfortunate for the welfare of society?

By far the most important occupation numerically is that of servant and waitress—over one million being employed in this one pursuit. And yet the actual increase is not large and the rate of increase is far below the average for all occupations. By way of explanation, it should be noted that the largest element of this class comes from the foreign-born, and the immigrants of the last decade are less apt to seek service than were their predecessors of earlier years. The Italians, Russians, Poles, and Jews that form the bulk of those who have brought their labor here in recent years, prefer to enter mills and factories or do piece work at home rather than go out to service as did the Germans, Irish, and Scandinavians who are now relatively decreasing in numbers.

The number of seamstresses has actually lessened since the native white women and Negroes, who for quite different reasons are unable to compete with cheap foreign labor in cities, are entering other lines of work.

The textile mills, the most important of which are cotton mills, show comparatively small numbers added to their workers from the country at large. Yet south of Mason's and Dixon's line this statement would be hard to credit, for in many districts the number of native white women in the mills has more

than doubled in the last ten years, owing to the impulse the manufacture of cotton has received in that section. On the whole, while this may lessen the time for schooling, it undoubtedly brings purpose and new ambition to many whom poverty kept inert.

The other occupations below the average rate of increase for the list are mainly manufacturing and mechanical pursuits. This is important because it shows that women are leaving the usually more or less unfavorable conditions of mill and factory and, according to their native ability and chance for training, are working toward better physical and mental development and the improvement of their surroundings—a tendency whose reflex can be seen in their homes.

Then, too, conditions of manufacture, such as the introduction of the steam laundry, complicated machinery and mechanical devices performing the work of many hands, have tended to lessen the demand for women workers in these industries. One manufacturing concern, the largest of its sort in the world, has printed in red ink on its letter heads: "*No women or children are employed in these works.*" The manager, upon being asked if that was supposed to guarantee superiority of manufacture, replied that while it assured patrons that skilled knowledge was demanded rather than cheap labor, the main reason was that since the machinery used in the shops was necessarily more or less dangerous and accidents seemed to occur despite all precautions, he was determined that no women or children should be the sufferers in that shop. This sort of chivalry deserves all honor for its practical humanity.

There seems to be arising also, ever more steadily, organized efforts to do away with the more serious disadvantages in many industries, and to provide comfortable conditions of work and recreation among laboring women, especially where they are employed in large numbers. This is generally termed "welfare" work, and is doing much to educate both employer and employee and to secure a better understanding between them. It has grown from small beginnings, and is now one of the most promising indications of a brighter and better life for the working women of the morrow.

Mrs. Anna Steese Richardson in the *Woman's Home Companion* for September states that since 1900 the number of working-women in this country has increased about cent. and their wages 27.5 per cent. ninety-nine women out of a hundr work do so in order to support the or others, in whole or in part, to avoid ing upon relatives oftentimes less able than themselves, and to aid in maki homes places in which their families c and enjoy life, as well as exist, it i reasonable to rejoice that their effo meeting with some measure of succes tendency is sharply upward.

THE GIRL WITHOUT TRAINING

But the girl who has received no training and is unaccustomed to worl a living may well hesitate before lea small circle of friends for the strife of city — whether she be led by ambi driven by necessity. For the success w sees that others have achieved will be win, and her chances to earn even living will be lessened by a competitio leaves so little standing room for u laborers that only the strongest or the can succeed for a time during which, be wise, they will leave no stone untu gain some special knowledge or skill. to some of the larger exchanges, int offices, and employment bureaus of establishments will show all sorts and of workers striving to get an appoint places when only a casual questionin them so unfitted that they could not worthy position longer than a sing others of high attainments eagerly a the most mechanical duties if they secure a temporary foothold.

In a word, the opportunities for talent in almost every special line are co growing greater and more attracti workers for any reason inefficient crowded out.

Grave and serious as are some phase advance in numbers of women wage- many of them deal, after all, only ceptional or abnormal conditions, some will in time right themselves. When th is viewed as a whole, the larger tenden seen to be working for the uplift of the and more particularly of their home opportunity to work affords to the ma means for the achievement of highe and the fulfillment of worthy ambiti affections.

A HOMESTEADER'S CABIN ON THE DESERT BEFORE IRRIGATION

THE REAL CONQUEST OF THE WEST

THE WORK OF THE UNITED STATES RECLAMATION SERVICE

BY

ARTHUR W. PAGE

WHO ACCOMPANIED SECRETARY GARFIELD ON HIS JOURNEY OF OBSERVATION IN THE WEST

GIANT CACTUS

THE Government has begun where nature left off in making fertile the land of the West. In its policy of giving away free homesteads, the Government came to the point where it had nothing left but arid land. Then Congress passed the Reclamation Act, and the Reclamation Service began its work. The magnitude of its irrigation works in the arid areas of the Far West can hardly be appreciated except by a journey of inspection and a definite study of these great undertakings, for some of them are feats that compare with the greatest engineering work anywhere in the world. It is making lakes at some places and

GIANT CACTUS

TEMPE, ARIZ., IN THE WATERED DESERT

THE PATHFINDER SITE, WYOMING
The dam, when completed, will hold 3,840,000,000 gallons of water

THE SHOSHONE SITE, WYOMING
The dam will be 25 feet higher than the Flat-iron Building, New York

THE BEGINNING OF THE ROOSEVELT DAM, SALT RIVER CAÑON, ARIZ.

THE SITES OF THREE GREAT GOVERNMENT DAMS

THE MAIN CANAL ON THE MINNEDOKA PROJECT IN IDAHO

graph shows the siphon under the railroad tracks, and the junction of one of the laterals with the main canal

em up at others; it is at some places ivers out of their beds and at others underground waters to the surface.

worked out by men of no more than ordinary skill. The social results of this reclamation work are more important than its money value.

THE GREAT GARLAND CANAL ON THE SHOSHONE PROJECT, WYOMING

e canal is sixty miles long and distributes the water stored by the Shoshone dam over 125,000 acres

se irrigated lands some of the greatest ral triumphs on earth are being made; culture here reaches its highest level as

Homes are made for a dense population on small areas, so that agricultural communities become in effect towns. At places town and

THE HUNTLEY CANAL AND THE YELLOWSTONE RIVER

l gets its water from the river above the point shown in the picture and distributes it over 30,000 acres from the construction camp far back over the horizon

AN IRRIGATION CANAL NEAR PHOENIX, ARIZ.

DATE PALMS IN THE OASIS MADE BY IRRIGA

country life are blended—are one—as they are nowhere else in this country. The total impression that a journey given to the study of this subject leaves is that the work of the reclamation service is one of the wisest acts of the general Government — as beneficent as it was necessary.

Yet a journey of three months throu arid states produces a feeling of surpris after all is done the reclaimed parts of deserts will be so small a proportion- patches on a map of great distances.

Two-fifths of the United States is ari that area, 9,000,000 acres, or about 1 pe

A TYPICAL SCHOOLHOUSE IN AN IRRIGATED DISTRICT

The schoolhouses are among the first buildings on the newly opened tracts, and they are so distributed that n out of reach of them. The shed on the left is for the pupils' ponies

THE ARID PLAIN BEFORE IRRIGATION
Land east of Billings, Mont., to be irrigated by a canal system recently completed by the Government

is irrigated. The rest is desert. The arid country now supports but a small population. Detroit has more inhabitants than the whole state of Montana yet has. Cambridge, Mass., has twice the population of Nevada. A stable and growing population in this region depends on irrigation. The works now under construction by the Reclamation Service will irrigate 1,598,000 acres and the projects planned will add 3,270,000 more. The story of Billings, Montana, will help to show the significance of this. A ditch was built to take water out of the Yellowstone River to irrigate about 25,000 acres of land west of Billings. There are about 3,000 people on that farm land and about 10,000 in Billings. The ditch made the town. Without it Billings would now be like many other Montana towns—a few houses, stock pens, and perhaps 500 people. Irrigation does not mean an exodus from the cities. For every irrigator who receives a farm, two or three persons will live in the cities, with all the business and commerce which they imply.

Nowhere else in the United States are all the natural resources so scientifically used. I went 160 miles up the valley of the Shoshone

THE NEXT STEP — SETTLEMENT
A ranch northeast of Billings which was desert six months before. The ranchman is using vegetables from his own garden

THE LAST PHASE OF THE DESERT
A ranch west of Billings. Eighteen years ago the owner traded 160 acres for the shingle roof. That land is now worth $16,000

THE GOVERNMENT ROAD TO ROOSEVELT, ARIZ.

As it winds around the mountain side of the Salt River Cañon

THE HEADGATES OF AN IRRIGATION SYSTEM
Where the river water enters the canal

A TUNNEL THAT SAVES TWENTY MILES
The road up the Shoshone Cañon

River, in Northwest Wyoming, and for the whole distance the forests, the river, and the land were being prepared by the Government for their most beneficial use.

The head waters of the Shoshone River are in the Yellowstone Park and in a national forest. The forest, protected against destructive lumbering, retains a great deal of moisture and tends to prevent sudden and violent freshets. But, in spite of this, like most Western rivers, the Shoshone is subject to destructive floods. To check these floods the Reclamation Service is building a high masonry dam in the river cañon between Rattlesnake and Cedar mountains. This dam will store the flood waters in a reservoir that will stretch twelve or fifteen miles up the valley. The dam is 312 feet high and below it the river has a rapid fall, which will give an almost unlimited water power. The water in the reservoir will be allowed to flow

THE EARTH-DAM ON THE UMATILLA PROJECT, OREGON
As solid and enduring as the hills on which it abuts

ALFALFA-FED CATTLE ON AN IRRIGATED RANCH

Irrigated alfalfa supplies hay for winter feed and obviates the necessity of keeping the cattle on the open range

down the river gradually as it is needed for irrigation. It is diverted from the river into a tunnel by a low dam. Usually the water would be diverted from the river directly into the main irrigating ditch. But the Shoshone is in a cañon and it was necessary to make a three-mile tunnel to convey the water up to the level lands of the valley. At the lower end of the tunnel is a settling basin from which the main canal opens. The Shoshone River carries so much silt that without this basin for sediment the canal would soon be choked with mud. From

AN IRRIGATED ORCHARD IN KANSAS

On the government project near Garden City. The water is supplied from wells by twenty-three pumping stations

WHERE TOWN AND COUNTRY BLEND

Profitable 20-acre farms on the Belle Fourche Project, South Dakota

THE RECLAMATION CENTRES OF THE FAR WEST

The black portions show land to be irrigated by the works the Government is now building
The rings show the reservoir sites

the basin the canal runs sixty miles along the valley, distributing water over 125,000 acres of land; homes are provided for thousands of people where formerly a few cattlemen divided dominion with the coyotes and jack-rabbits. From the time the snow falls on the mountains until the water reaches cultivated land, it will be controlled and used. None will be wasted. This is the real conquest of the West which is just beginning. The Shoshone project, by the way, shows "Buffalo Bill" in a new role. He generously gave up to the Government his water rights on the Shoshone River and made the project possible.

These projects are planned to use the natural resources to their utmost, and they are built to last forever. The tunnels and many parts of the canals are lined with concrete. The three great dams, the Pathfinder and Shoshone in Wyoming and the Roosevelt in Arizona, are either concrete or masonry. It is hard to realize the size of these structures. The Shoshone dam, for instance, is twenty-five feet higher than the famous "Flat-iron" building in New York. On the Umatilla Project is an earth dam. Before I saw it I supposed that it, at least, would lack the everlasting appearance of the other structures. But I was mistaken. It looks more like a long hill than a dam, and it is as permanent and solid as the hills on either side. The dirt of which it is built is selected for its impervious qualities and every layer that is added is watered and packed.

Perhaps the most spectacular of all the reclamation works is the conquest of the Colorado now in progress. The lower part of that great river overflows every year and floods thousands of acres of land. It is constantly changing its channel, building up great mud flats and bars and tearing them away again. Its bed is a shifting mass of silt. I was at Yuma during the low season of the river and it was carrying probably 75 tons of mud a minute past the town. Yet the government engineers are building a dam across this all-powerful and destructive flood to divert water for irrigation. Twelve miles above Yuma the river runs between two hills almost a mile apart. Across the river at this point the engineers are building the Laguna dam, 4,700 feet long and 346 feet wide, with a concrete surface over its entire area. It is a tremendous, low-lying structure of 600,000 tons, the weight of which will keep it in place, for no rock foundation could be found in the river bed on which to build it. Another unusual piece of construction on this project is the inverted siphon which carries the water of the main irrigation canal under the bed of the Gila River.

The work of the government engineers has gained a reputation for permanency and thoroughness. "Highest United States Government engineering standards followed throughout" is the boast of a private irrigation company in Idaho. A man begins to lose the usual scepticism about the Government's ability to do efficient work as he goes from project to project. He begins to take a kind of patriotic pride in the great dams and the miles and miles of canal, especially when he sees some of the obstacles which have been overcome in their building. Transportation of material to many of the projects has been difficult. The railroads have helped with branch lines. The Reclamation Service itself has built 327 miles (as far as from Philadelphia to Boston) of dirt road through difficult country. From Mesa to Roosevelt, in Arizona, is one of the most picturesque mountain roads in the West and one of the best. An incident which happened during the construction of the road from Cody to the Shoshone dam gives an idea of the problems of Western road-making. There is a tunnel through a rocky point a little below the site of the dam. While it was being built, the men on one side of the point were in hailing distance of those on the other side, but to shake hands with them would have meant a twenty-mile journey over mountain trails.

Worse than the transportation problems have been the labor troubles. Labor has been scarce and high-priced all through the West—higher for the Government than for anyone else, for on all its work the eight-hour day is prescribed by law and a nine-hour wage is necessary to get men. In the Corbett tunnel day-laborers were getting $3 a day.

The Government has suffered also from a very unusual cause. Contractors have offered to do the work too cheaply. Here is the explanation which one engineer gave me:

"On tunnel work, for example, if the contractor bids high enough to cover all possible contingencies, his price would be so high that the engineers would not be justified in accepting it. There are always some contractors whose bids make little allowance for unexpected difficulties. Their bids are the lowest and we have to take them. Then, when they 'bust,' we have to take up the job at a moment's notice."

The reclamation work is on a so much larger scale than other work in the West that it presents many new problems with which the contractors were unfamiliar, and many failures have resulted. On the two longest tunnels and on two of the big dams, the contractors have failed. Even a well-known New York firm of contracting engineers, with a record of good work on four continents, was unable to finish the Laguna dam. When the contractors fail, the engineers are called upon to gather a working force and complete the job. Civil service rules, however necessary and beneficial elsewhere, are inconvenient in such a crisis. They provide for examinations for assistants to be paid $75 a month in a country where day-laborers get $3 a day. Imagine a railroad section-boss with two finely printed pages of instructions on how to hire a Mexican peon! That illustrates how the government labor is hired. This is not written as an attack on Civil Service rules. The engineers themselves are glad to be protected from politics by them, but the red-tape makes the government work harder than private work. And there is one more difference. I know of two engineers in the Reclamation Service who have received offers from contractors of practically twice their present salaries. One engineer in charge of a $6,000,000 project gets $3,500 a year. The service is remarkably efficient now. The Government is giving these men a wonderful training, but it is probable that some contractor will get the benefit of it.

The Reclamation Act was passed in 1902, and provides that all but 5 per cent. of the income from the sale of public lands, or about $5,000,000 a year, shall be devoted to building irrigation works, and that the cost of these shall be paid in ten annual instalments by the farmers using the water. The money will then be used over again to build more irrigation systems. This method of providing a continuous fund probably saved the bill from defeat, for there is little likelihood that the Eastern representatives would have voted the necessary funds from the Treasury. As it was, the bill had a hard time. Senator Newlands, of Nevada, its sponsor, gave stereopticon lectures night after night to show the need of the reclamation work. Finally, with the aid of the President, the bill went through in the middle of the Panama Canal debate. Since the Reclamation Service has become popular in the West, a number of Western politicians are, quite naturally, willing to assume responsibility for it.

THE LEADERS IN RECLAMATION WORK

The man who made the Reclamation Service itself is its present director, Mr. F. H. Newell. In his long experience in the Geological Survey he became convinced that the Government was the only agency by which the water resources could be thoroughly and comprehensively utilized for irrigation. For many years he had gathered information and had come to know the men necessary for a Reclamation Service. When the Act was passed the great organization sprang into active existence almost at once. Mr. Newell, besides being an engineer, has been a very painstaking student of the land and water problems of the West. He is one of the group of Washington officials whose knowledge is behind the administration's Western policies.

In the cry that was raised in some parts of the West against the paternalism of these policies, reclamation, the most paternal of them all, was the least complained of. Looked at from one point of view, it is a national improvement, like work on our rivers and harbors. From another standpoint, it resembles special favors to particular communities. From the latter point of view there might be a strong theoretical objection to the reclamation work by the Government, but government aid to the West is so common that it goes unnoticed. The Western idea of objectionable paternalism has no reference to financial assistance. Almost the only people who advance the objection of paternalism to the Reclamation Service are those who use it to cloak some personal grievance. As ex-Governor Prince of New Mexico told me, the Western people judge this government work by its effect on their personal welfare. As that effect is usually favorable, their opinion of the Reclamation Service is usually likewise.

HOW RECLAMATION TRANSFORMS

On the morning of June 26, 1907, all was excitement in Billings, Mont. It was the day of the formal opening of the Huntley Reclamation Project a few miles east of town. Every stage of Montana's civilization was represented. In the crowd were men who had come to that country as Indian traders before the Custer massacre, when goods came in flat-boats 1,200 miles up the Missouri and Yellowstone from

St. Louis. One of these men had killed seven Indians with his own hand. Another had been tied to a stake for torture. There were Crow Indians in the crowd, too, watching the ceremonies by which another piece of their territory was being thrown open to the white man, for the Huntley Project is on the Crow Reservation. There were sheep men, whose flocks grazed for hundreds of miles on either side of the town and wintered in the valley. And, more important than any of these, there were the irrigating farmers. Within a generation Montana has had all four types: the Indian, the trader, the herdsman, and the farmer.

These farmers are the men who made Billings with its 10,000 inhabitants possible, for they cultivate the land under the ditch which made the town. One of them, Mr. I. D. O'Donnell, took me out to his ranch in an automobile. The automobile is an innovation and therefore to many Eastern farmers an enemy. To the irrigating farmers it is just the opposite. The revolutionary change that they had to make when they began to farm by irrigation shook them loose from the traditional conservatism of their calling. Our humorous papers would have fewer of the "Farmer Hayseed" and "Uncle Silas" kind of jokes if they were published in the West, for the Western farmer is a wide-awake man of affairs. His associations manage the long canal systems; in some cases, they financed their building. The farmers band together to ship their produce, to "dicker" with the railroads for rates, or to "bulldoze" the trust into building a sugar factory to furnish a market for beets which they intend to grow. They are men of a good deal of wide and useful information, and they work their farms with the same intelligence and ability with which other businesses are conducted. The results are astonishing. Mr. O'Donnell, for example, won prizes for his farm products at the fairs at St. Louis, Omaha, and Portland. In 1906 he won a first prize in the National Orange Judd seed contest with 130.5 bushels of oats from one acre. He also received the first prize for the best yield of an acre of red fife wheat. A smooth potato weighing 5 pounds and a pumpkin weighing 160 pounds have grown on the Hesper Ranch, as his place is called, and some of his alfalfa has measured 11 feet 6 inches in height.

Coming back from the Hesper Ranch to Billings, we came through a well-tilled valley dotted with comfortable houses and clumps of trees. There were almost as many trees as there are in the more intensively cultivated valleys in the East, and every one of them had been planted. About four miles from town I made some casual remark about a farmhouse that we were passing.

"The man who lives there," said Mr. O'Donnell, "came here as a sub-contractor on the railroad. One of his employees stole his teams and he was left stranded. He settled on a farm and is now worth $25,000. Most of the farmers here are worth that much."

East of the town is a plateau or "bench" about twenty miles long and nearly half as wide, which has recently been opened for settlement by the Billings Land and Irrigation Company. During the past summer a part of it was bearing its second crop. There is not a full-grown tree on the whole stretch of twenty miles, and not many small ones have been planted. The houses are new, many are unpainted, and some of them are only temporary structures. This tract affords a bare and dreary prospect for the eye of an Eastern settler, and yet in a few years it will be an indistinguishable part of the green and fertile valley which it joins on the west. Across the river, and at a lower level, the 30,000 acres of the Huntley Project lie parallel to the bench. On the opening day there was not a farmhouse on it; except along the river edge, not a tree. There was not a green thing on the 30,000 acres and not a foot of it had ever been plowed. Yet there were three times as many applicants as there were farms. There were farmers from the old Western Reserve states, northern Missouri, Kansas, Nebraska, etc. There were also men who had developed farms in other irrigated districts, sold them for $200 or $300 an acre, and come to repeat the process on new land. Most of the settlers on the newly opened lands have some money; for although government land costs them nothing, some capital is necessary to carry them through the first year.

HOW MEN OBTAIN GOVERNMENT LAND

The old method of opening land for settlement in which men raced for homesteads is not practised on the reclamation projects. Any citizen (who has not already used his homestead right) can make an application for land. On the opening day the applications are picked from the pile at random; in the order in which they are picked the applicants may choose their homesteads. But these

irrigated homesteads are of 20, 40, or 80 acres instead of the usual 160. To receive full title to the land, the applicant must live on it and cultivate it for five years; and to obtain a permanent water-right he must pay the ten annual instalments covering his share of the cost of the irrigation works. At the end of the ten years the canal systems are turned over to the farmers. On most projects the payments are about $3.50 per acre per year. On many of the projects, part of the land to be irrigated is in private ownership. Before work is begun the owners agree to divide it into small holdings and sell it. The farmers who buy this land acquire title to it immediately but they must live on it and make the ten payments to obtain a water right, without which the land is valueless. This system was devised to eliminate the ever-present land speculator. In the main, it is successful though many of the speculators get homesteads on which they do not intend to settle, relinquishing them later for a consideration. I had a relinquishment for 80 acres on a government project offered me for $2,000. Away from the project land speculation is rampant. In some districts you may see automobiles full of possible buyers being whirled around among the best-looking farms by land agents whose impressive statements remind you of the "Seeing New York" man describing "Millionaire's Row" on upper Fifth Avenue.

The success of the Billings farmers is not unusual. Their main crop is alfalfa, which they sell to the sheep and cattle men for winter feed. It requires very little work and brings from $20 to $35 an acre. They raise some grain, potatoes, and about 100,000 tons of sugar beets for which they received last year between $400,000 and $500,000 from the new $1,000,000 sugar factory at the edge of town. The beets are the most profitable crop but they require a tremendous amount of hand labor, which is now supplied mostly by Polish immigrants. This crop has the added disadvantage of depending for its profit on the sugar tariff.

On most of the reclamation projects, the main crop will be alfalfa, supplemented by grain and vegetables. An editor named Ham told me that he could raise one thousand pounds of pork to the acre on alfalfa land and sell it for six cents or seven cents a pound. Many of these farmers have found out that it pays to sell their hay in the form of beef, mutton, pork or milk and butter. Some of the projects however, are adapted to fruit growing. The Umatilla Project in Oregon is one of these. Hermiston, the town of the project, is new. It has recently attained the dignity of a railroad station. Formerly a box-car served for this purpose. There is so little obstruction to the wind and the soil is so light that if a man were to plow at the wrong time of year his farm would be likely to blow away in a day or two. It is reported that such a thing happened at the neighboring town of Irrigon. The land to be irrigated is, if possible, less inviting to the eye than that at Huntley. But that is the way with all this irrigated country before the water is put on it. The worse it looks, often, the better it is. This particular land near Hermiston, for example, has every requisite to make it a second Yakima. The Yakima canal system was started by private enterprise but it has since been taken over by the Reclamation Service. A man in that valley this fall refused $2,800 for less than two acres of pears on the tree. Apples destined for England have brought ten cents apiece wholesale. Buyers have come even from Russia to this famous fruit section. The more successful of these fruit farmers can live on eight or ten acres in the same comfort and luxury which the successful business man has in his suburban home. The difference is, that in Yakima the place supports the man; near the Eastern cities the man supports the place.

Probably the most ideal living conditions in any farming communities in the United States are in the irrigated districts of southern California. The farms are small enough to be neighborly and productive enough to be profitable. These districts are really thinly settled towns, with the advantages both of the town and the country. The Reclamation Service hopes to bring about this happy condition on all its projects. The land is divided into small holdings. Town sites are scattered through it so that no one need be far from either a church or stores. At more frequent intervals land is set apart for schools. In that country all but the very youngest children ride horseback, and as the school provides a shed for their ponies, the transportation problem is not difficult. In some places those who do not go mounted are collected by a stage. On most of the projects there will be an abundance of water power

developed at the dams and the drops in the canals. This will be used for trolley lines and light and power. There will be small farms intensively cultivated on which the manual labor is greatly lessened by the use of electricity, connected with the stores and railroad by a trolley line which will carry both produce and passengers. Already, near many of the houses in the irrigated districts, one sees the windmills which betoken running water in the houses. Automobiles and telephones are even now common. The irrigators are progressive in another way. They are publicity mad. At the opening of the Huntley Project a delegation arrived with large badges on which were printed "Miles City Boosters." Every little hamlet supports a commercial club or a board of trade which sends out pamphlets by the hundreds. They buy pleasant mention in the Western newspapers and use great ingenuity in getting themselves mentioned free both East and West. Feeling runs high between rival towns; indeed, at Hermiston, there is a bitter animosity between the people who live on one side of the railroad and those who live on the other.

In their advertising campaigns the towns have been ably led by the railroads. Their immigration agents have studied the migratory habits of men as carefully as an ornithologist studies birds. The railroad advertising for the Reclamation Service has been both generous and effective. Indeed, the whole West is indebted to railroad advertising for a large number of its people. As a Southern Pacific immigration agent phrased it, "If this road had had its terminus in Texas, Mexico, or hell, it would have had all these folks there."

In almost all of the advertising pamphlets about certain localities is a list of the possible crops. They are all much alike, the only limit of the list, it seems, being the number of plants known to the author. Yet in most cases these claims, however extravagant they sound, are true. For example, at Yuma, which has a rather exaggerated reputation for heat, almost all of the crops of the temperate and semi-tropical climates will thrive; and, in addition, date-palms will grow in this southwestern desert and in no other part of the United States. At Yuma also one may have fresh vegetables all winter. The Salt River Valley in Arizona is probably one of the oldest agricultural sections in the country, for the modern irrigation canals follow the general lines of an irrigation of a prehistoric race. In that valley, as at Yuma, plant growth continues all the year around. This southwestern country, before irrigation the most desolate and forbidding of them all, will probably be the richest region when it is finally developed. Up in Nevada, on "the great American desert," where hundreds of the California gold-seekers died of thirst, the Truckee-Carson Project has already made a town and a prosperous farming community.

Near Garden City, Kan., the Reclamation Service has built a pumping plant to supply water to a canal from thirty-two wells. When the Arkansas River is high, the pumping plant is unnecessary; but for a part of the irrigating season every year the river does not supply sufficient water. In southern California is a section in which artesian wells furnish water for irrigation, and the Geological Survey in its recent investigations has found that most of the west side of the San Joaquin Valley can be irrigated in a similar way.

These are some of the beginnings of a search for more water. The rivers of the West are often an uncertain source of supply. Two of the largest are hardly accessible for irrigation. Until the Colorado comes out of its cañon a little above Yuma, there is no way of getting its water up to the land. The great Columbia River also flows down a cañon, though not a very deep one. Yet the fall in the river is so gentle that an irrigating ditch with its headgates in the river in which water would flow would be forty or fifty miles long before the water could be delivered to any land. The Umatilla project is on the south bank of the Columbia, the biggest volume of water in the Northwest, and yet it draws its water from the little Umatilla River. As was said before, about 6 per cent. of the arid land of the West is now irrigated. According to the best calculations, there is an available water supply to irrigate only 4 per cent. more. Every ill-advised irrigation system reduces that percentage. The Reclamation Service is the only agency at work whose operations are large enough to make systematic and comprehensive plans for the fullest utilization of the water resources. With the best that can be done, more than 90 per cent. will never grow any valuable plants which are now known. It would be a national crime if the small remainder were not properly conserved for the use of the people. This is the purpose of the Reclamation Service.

THE MONEY-KINGS

III

REGULATING BANKS BY VIGILANCE COMMITTEE

BY

C. M. KEYS

WHILE the chimes of Trinity Church, at the head of Wall Street, called men to worship on the morning of Sunday, October 20th, one of the most remarkable vigilance committees that ever was formed came together in a white marble office-building, hardly a stone's throw from the doors of the church. The fifteen men who met at the Clearing House that Sunday morning represented the combined power of the great associated banks of New York. The law had signally and dismally failed. These men came together for the purpose of doing, without the aid or countenance of law, the thing that was necessary to save the financial world from a cataclysm.

For fourteen hours they labored. Then, at midnight, they ceased deliberation and went to the Waldorf-Astoria Hotel, seeking the men that had done the wrong, carrying the verdict, armed not by law, but merely by power — as completely a vigilance committee as ever served a notice on Montana "rustlers" or California highwaymen.

That night four men sat in anxious deliberation at this hotel. One was middle-aged and turning gray. He was the leader. His name is C. W. Morse, his calling that of the promoter, his business reputation that of the plunger. He made his money in such ventures as the reorganization of the so-called Ice Trust, in the formation of the new, widely heralded steamship "combine" to control all the coasting steamers out of and into New York, and in a dozen other smaller enterprises. The second, Mr. Fritz Augustus Heinze, is the most spectacular figure in the annals of latter-day copper history. He is the man who fought the great Amalgamated in the Montana copper wars, and won. His face is boyish, fresh, yet hard and firm—the face of a fighter. The others of that group were Messrs. E. R. Thomas and O. F. Thomas. Their wealth came to them from the late General Samuel Thomas, a speculative financier of the old school that gave us Jay Gould, Fisk, Drew, Vanderbilt.

The crisis had arrived. Less than a year before, these gentlemen had united their forces in the exploitation of a banking business in New York on a large and pretentious scale. They had bought banks. They had become directors. They had made great loans. They had turned those banks from the hard paths of simple commerce to the slippery trails of high finance. Through nine short months they had sowed the winds, trusting to Providence. Now, at midnight on October 20th, they were about to reap the crop that they had sowed.

To them came the Clearing House committee, tired from its labors, short of words, abrupt:

"Sell and get out of the banking business; or stay and take the consequences!"

That was the verdict. It is strongly reminiscent of the old familiar: "Two hours to get out of the county — two minutes to get out of range!"

"The consequences" meant ruin, nothing less. The whole financial world was on the brink of a panic, that fearful kind of panic that springs from breaking banks, from mobs clamoring at banking desks for their money, from mad, insensate, uncontrolled fear on the part of the people whose money rests in the banks. To stay meant that the next business day, Monday, would see every one of these banks closed in failure.

Mr. Morse looked at Mr. Heinze. Mr.

Heinze looked at Mr. Morse. There was no choice.

"We shall sell our stocks!" they said to the committee.

It has been done. The group of banks referred to in the former article of this series as the "Morse-Heinze group" is no more. The lesson of the Baring panic, the sin of the perversion of a commercial bank to the uses of the gambler and the stock-jobber, has come home to Messrs. Morse and Heinze and their associates.

NOT ALL THE BANKS ARE GUILTY

Perhaps this episode has removed from the New York banking world the most flagrant offenders against the code of conservatism, but not all. Nor may one say that all the banks are corrupt — far from it. In New York, as stated in a former article, there are still dozens of banks, both national and state, and dozens of trust companies untouched by this contagion. They have suffered from the errors of the sinning banks; but they themselves are still as strong, as safe, and as clean as they have ever been. It must be clearly understood that the national banks at large are not included in the criticisms leveled against the Wall Street banks as a class.

The time has come when the National Bank Act must be no more a screed pasted behind the door of the bank, but shall be, in letter and in spirit, The Law. It has been an open secret in Wall Street for years past that many of these great Wall Street banks, the centres of groups of banks scattered from the Battery to the Harlem River and beyond, have supported and assisted huge private speculators and have made possible great promotions in the industrial and the railroad world. That must be stopped. The Government has pleaded that the law, as it stands, is inefficient to stop it. Then the law must be amended. Why, in this great crisis of yesterday, was it necessary that the committee of the Clearing House, an unofficial body, acting arbitrarily, acting like a vigilance committee unarmed of law, should intervene?

The United States Government maintains a bureau for the supervision of the national banks, of which there are more than 6,600. That bureau is the office of the Comptroller of the Currency. It is its duty to inspect the banks, to enforce the law, to see to it that the funds of the people are safeguarded. Why, you may ask, did that bureau fail to detect the weakness of the Mercantile Bank and its associates? Why did that bureau fail to prevent the impairment of the surplus to the extent of nearly $4,000,000 in nine months?

The answer is one that the American people have grown accustomed to hear. It hears it whenever anyone asks why our consuls, our ministers, our ambassadors, the representatives of this people in foreign lands, must live in humility and poverty beside the representatives of foreign powers. To the shame of the American people be it said that the office of the Comptroller of the Currency, like most other offices in the gift of the people, is maintained on a basis of stingy parsimony, of utter meanness, and, consequently, of utter inefficiency and weakness.

The Government is supposed to inspect the national banks. To that end the department has eighty inspectors. They are paid fees, not salaries. Eighty men, eighty young men, working on starvation wages, to inspect 6,600 national banks—what a pitiful farce! If every bank were examined twice a year, those eighty men would have to average 180 banks apiece within the twelvemonth.

The Comptroller of the Currency, the head and front of this bureau, the man whose initiative alone constitutes the main bulwark of defence against fraud and danger in the banks, gets a salary of $5,000 per annum. His deputy gets $3,500. There is not another man in the department who receives more than $2,500 yearly salary. Our fathers, who saw a few small banks scattered about this country, forty years ago ordained these salaries. They invented this machine, and built it. We, who have seen the banks grow from 140, with resources of $37,000,000 at the beginning of 1864, to more than 6,600, with resources of $8,000,000,000 in our time, have been content to keep this same machine for the making of safety and are content—and, perhaps, will be content to-morrow, and until Ruin undisguised sits as a director in a thousand banks from Maine to San Francisco and from the Lakes to the Gulf!

A GOVERNMENT TRAINING SCHOOL FOR BANKS

The Government cannot keep a good man in this service. Since 1884, there have been seven comptrollers. One was Mr. Henry W. Cannon, who left the service to go into the banking business and is now chairman of the

Chase National. Another was Mr. E. S. Lacey, now president of the Bankers' National, of Chicago. Mr. A. B. Hepburn, now president of the Chase National, was another. The late James H. Eckels, president of the Commercial National, Chicago, followed Mr. Lacey. Mr. Charles G. Dawes, president of the Central Trust Company, Chicago, preceded Mr. W. B. Ridgely, who held the office from 1899 to 1907. What does that record mean if it means not that as soon as a man has proven himself fit for the position he is hired away from the Government by the banking interests?

Lower down in the service, the same tale is told. On this point, I shall quote Mr. Ridgely himself:

"It is one of the difficulties of the service that it is hard to keep a good man. Just as an examiner gets to know his district well and becomes really efficient, he is apt to be hired by some bank seeking for an officer. It is easy enough to get ambitious young men who are thoroughly competent to go into the service for the experience and acquaintance it gives them. It is more difficult and more important to keep them after they have been trained to the work."

There lie the reasons why the maintenance of law and order in the national banking world is left largely to vigilance committees. When the Walsh banks, of Chicago, became involved in loans on the Walsh railroads and other loans that could not be closed out, the Chicago bankers formed a committee. It had no legal weapons. It merely had the strength to deal with that great problem—and it dealt with it, bravely, cleanly, effectively. Similarly, the New York Clearing House committee, gun in hand, went at this Mercantile affair. It cleaned it up within a week. I can multiply instances of the same thing. I do not hesitate to say that the only time when the Government supervision is really effective is after all possible damage has been done. As a coroner the United States Government is an excellent officer As a policeman, in the banking world, it is practically useless.

BANKS THAT SERVE SPECIAL INTERESTS

It is well, before passing from the consideration of the New York City national banks, the great trust banks, to make it clear that the Mercantile National situation is not by any means unique. There is no hour of the year when the banks controlled by the great interests are not loaning money on the stocks and bonds that represent the properties controlled by these same interests. A railroad needing money can borrow it more freely from a bank in which its directors are interested than it can borrow it from any other bank. An industrial needing discounts can get them from the banks in which its president is interested at better rates and often in greater amounts than it can get them from any other bank.

This is "business courtesy," and nothing more. In a thousand cases it is justified by results. In the large majority of instances, there is nothing about it that would bring down the censure of the Government, or even the censure of the Clearing House. No one, for instance, should criticize the National City Bank for loaning funds to the Standard Oil Company, or discounting its paper. If the Bank of Commerce should loan to Mr. J. P. Morgan freely, at fair rates and on good security, no one could claim that such a loan was improper merely because the Morgan influence has for years been powerful in the Bank of Commerce. Nor did anyone criticize the First National Bank when it took from the Rock Island, in the midst of the decline of 1903, a big block of notes at a price higher than any other big bank would pay. These are but incidents, and proper incidents, of barter and trade. The Rock Island, for instance, is a big client and a good business friend of the First National. It has a moral right to look for favorable terms, provided only that those terms do not threaten the interests of the other depositors of that bank.

There the line must be drawn. There it has *not* been drawn in the cases of the big New York banks under the influence of the Wall Street powers. These great consolidations have been formed for the express purpose of gaining deposits of money from the people. They have gained such deposits. The concentration has brought it about that these deposits are more and more under the control and direction of the financial leaders. That power has been used, freely and without stint, in furthering the aims and ambitions of the powerful individuals who exercise a more or less complete control over the policies of the central banks.

It is an old story. When Jay Gould and Jim Fisk were the kings of the Street, they too

needed more backing than they had. They, like their modern imitators, bought a bank. That bank, freely and without hesitation, certified the checks of the Erie gamblers to almost any amount. In April, 1869, the Comptroller came down on it for inspection. Out of fifteen checks, selected at random, he found only three that were good. The rest represented assistance given to brokers and speculators without much security. Six months later that same bank certified checks to the amount of $7,500,000 for Mr. Gould alone. In the very midst of the "gold panic," the Government again sent inspectors, and the bank informed Mr. Gould that it was "afraid to certify for him just now!"

THE MORSE-HEINZE-THOMAS METHOD

The Morse-Heinze affair may be touched upon in brief, merely to show the ways that are used to subject a bank's deposits to the interests of individuals. Mr. Heinze, after his great campaign in Montana, made a settlement with Amalgamated Copper. That settlement left him rich in stocks and money. The bulk of his wealth, in all probability, was represented by the stocks of the United Copper Company. He made those stocks pay dividends, good, substantial dividends. He put them on "The Curb" in New York, and stirred up a speculative campaign in them, so that the public would come and take them off his hands.

Mr. Morse was interested in the reorganization of the American Ice Company. That left him with a block of stocks representing the new consolidation. Later, he formed his steamship "combine," to control all the coasting lines into and out of New York. That left him with a huge amount of bonds and stocks, notably income bonds called "Consolidated Steamship Bonds." These bonds sold in the market, early in the year, at from $25 to $30 per $100 worth of bonds. The public was not greatly interested in these bonds, nor did it enthuse to any great extent over the United Copper stocks, Mr. Heinze's specialties.

Something had to be done. For some years past Mr. Morse had been in the habit of buying, from time to time, blocks of stocks representing the smaller banks of the city. He had some interest in the Mercantile, the New Amsterdam, the Fourteenth Street, the Hamilton, and half a dozen others. Mr. Heinze, nine months ago, joined forces with Mr. Morse. He bought a large interest in the Mercantile. Finally he made a fight for control against the Goulds, who had held the control up to that time Mr. Heinze won, and finally bought out the Gould stock.

Then, here were these two precious financiers of the new, lurid, flamboyant type, in control of a great machine which gathered together the money of the people, all sorts of people, from all over the town. The Mercantile had large deposits from out-of-of-town banks, from the Gould interests, from Wall Street at large. The Bank of North America, situated in the heart of the financial district, had a somewhat similar *clientèle* of depositors. In it Mr. Heinze seems to have had little interest. It is a strong bank, but, even so, Mr. Morse had become one of its favored clients.

The smaller banks and trust companies ranged, in character, from the main office of the Van Norden Trust Company, bidding for the deposits of the extremely wealthy on Fifth Avenue, to the East Side branch of the same, seeking the patronage of the little Jewish street-merchant, at 320 Grand Street. Nothing was too small, nothing was too big. The drag-net covered the city. In all, the Morse-Heinze-Thomas group of banks covered nearly twenty institutions, big and little. Not all of them were controlled, by any means, but in all of them some one or more of these men sat as directors; and in most of them any of these men might find favorable consideration when it came to a question of making a loan on stocks or bonds as security.

So much for the machine. It was used freely, brazenly, defiantly in the stock-market interests of the men in control. When the Heinze interests went into the Mercantile, that bank had a surplus of $5,000,000. Nine months later—that is, to-day—the surplus is not much over $1,000,000. The difference represents the loss of the bank, largely in loans made on the stocks and bonds of the Heinze and Morse companies. Ice Securities, Steamship Bonds, United Copper stocks—these have taken the places of cash, gilt-edge stocks, high-grade bonds The bank is gutted. Fortunately, it has been caught in time; insolvency was as certain for it as darkness after daylight.

It is not that personal loans are made to the great financiers alone. That is done, but

it is a small and obvious part of the damage. At times the banks will certify checks for amounts far and away beyond the amount of cash that the interested capitalist has on deposit. That is as old as the days of Jay Gould and Jim Fisk, as shown above. It is also as new as the day that dawns. Yet again, and unceasingly, the banks will strain a point to take as collateral the stocks and bonds in which the controlling interest is involved, no matter who presents them. Brokers are encouraged to deal in stocks like United Copper and bonds like Consolidated Steamship bonds, because a great bank will take them as security for loans. The market is free for such issues for the same reason. Men who know nothing about banks and very little about stocks speculate in these stocks on margin, because the brokers are willing to take orders while the banks will lend money on them. That is the refinement of the art of running a bank. That, in various forms, is the method of the day.

I have no hesitation in saying that it has been done, within the past few years, on a much bigger scale than the Morse-Heinze banks have done it. It was done in the securities of the Interborough-Metropolitan, and done, too, by one of the great trust banks and its subsidiary trust companies. It was done in the winter of 1906–07 in the effort to sell to the public at high prices the stocks of the Union Pacific and the Southern Pacific. It was done in the case of the Rock Island Collateral Trust 4 per cent. bonds in 1901 and 1902. Blatantly and criminally, it was done in the effort to sell the water-logged stocks of the United States Steel Corporation. No man who lived in Wall Street in those days can ever forget how it was done in the case of Amalgamated Copper, seven years ago. That black episode still stands unrivaled on the records of Wall Street's filibustering exploits.

Now, these things are not crimes. I do not believe that any offence against the statutes of the land lies in the making of a loan by a bank to any broker or banker or private individual, on stocks and bonds that have a market value. That they are morally reprehensible, when done with an ulterior object itself unworthy, no man will deny. But men in the pursuit of money pay little heed to moral reprehensibility. So long as the law permits this rigging of the market and this making of the national banks parties to such manipulation, so long will it be done. Looking backward from this time of law and order, we may wonder why men flew the pirate flag; and yet, why not?

THE PERVERSION OF THE BANKER

Let us put the matter in a nut-shell. The financial world is suffering from the decadence of the banking profession, as exemplified in the typical Wall Street banker of to-day. Time was when the title "banker" meant honor, truth, confidence and stability. The bank was a trustee of other people's money. A single gambler on the list of directors was enough to damn that bank in its community. A man who had created such securities as United Copper, American Ice, Amalgamated Copper, and carried on a huge gambling campaign in them, had no place in the banking world. If he did buy bank stocks and elect himself a director, the rest of the board would flee from him as though he were a leper. They would resign as directors, withdraw their deposits and, by so doing, set up the red flag of danger at the doors of the bank.

In Wall Street banking it is different. There the speculative banker has been steadily gaining position. I can name a dozen bank directors in New York who are known in Wall Street as speculators of the most daring type. They are eagerly sought as directors of banks, trust companies and safe deposit companies. They bring "business," the business of the broker in Wall Street, the business of the inflated companies that they have created. The old-line banker, quiet, safe, conservative, slow, has been pushed to the wall. To-day, the cry is "more deposits—no matter how—get us more deposits!" The banks hang up all kinds of inducements—big interest rates, special privileges to out-of-town banks, new-fangled, trading-stamp, be-frilled and be-decked accounts, "special departments for women"—anything, everything, to get the "business." alas, that the old-fashioned term has come to bear so sinister a meaning!

And out of it has grown this noisome, pestilential form of banking that makes the dollar, and the dollar alone, the king of the banking world. In New York more perhaps than in any other city it has come about that the banks will justify their actions by an appeal to their "profit and loss account."

When, in conversation with a First National Bank director, I happened to remark that the bank's accounts looked to me to be "loaded with stocks," I was met with the overwhelming assertion that this bank "is the best-run bank in New York, because it makes more money out of a given amount of working money than any other bank in New York!"

A COMPARISON OF BANK PROFITS

That statement is true. By way of establishing it, let us consider the capital, the surplus, and the deposits of each bank as its "working money," and discover how much each of the bigger banks made out of $100 of this money in the period from September 8, 1906, to August 22, 1907, these being the dates of two calls by the Comptroller. The result is shown in this table:

BANK	GROUP	PROFITS PER $100
First	Baker	$5.10
Chase	Baker	4.80
Mercantile	Morse	2.70
City	Stillman	2.50
Chemical	Independent	2.40
Commerce	Morgan	2.00
Hanover	Stillman	1.90
Park	Park	1.60
North America	Morse	1.10

Why should the "Baker banks" be able to average profits of $4.95 on each $100 of cash available for the banking business, while the genius of the Stillman banks can produce but $2.50, or even $1.90 per $100 of money?

If one goes down to 52 Wall Street and asks that question, the smiling reply will be:

"Because this is a bank, not a speculating brokerage house!"

But if one goes to Number 2, same street, and asks the question, the reply is equally convincing:

"Because the bank is run for its stockholders and depositors, not for anyone outside!"

A man may take his choice. He may believe that the First National makes the best of its profits in speculation, or by loaning to speculators: he may believe that the National City Bank is run largely in the interest of the "Standard Oil Crowd." If he wants to be safe, he may believe both. In any event, he will leave the question with the profound conviction that there are many things in the art of Wall Street banking that are not found in the simple text-books that guide the country banker. Any country banker who reads this statement and tries to figure out a 5 per cent. net profit on his capital, surplus, and deposits will probably see the point.

BREAKING THE RESERVE LAW

In a former article I pointed out that the national banks of this city indulge in the practice of buying stocks and bonds to an extent never contemplated under the National Bank Act. That is true. It is also increasingly true that the "reserve law" is broken with impunity by many of these banks. That law is, in effect, that the national banks of New York, Chicago, and St. Louis shall keep in the vaults 25 per cent. of their deposits in cash; that the banks of thirty-nine other cities shall keep 12.5 per cent. in their own vaults, and a similar amount either in their vaults or in the banks of the three cities above named; the country banks must keep 15 per cent. of their depositsin cash, but may keep three-fifths of it in the city banks, on deposit.

The country banks observe the law pretty well at all times. Many of the thirty-nine cities also keep it faithfully, though not all of them. Chicago and St. Louis are flagrant offenders against it. On the average, New York is much better than either of the other central reserve cities, but here there are some marked exceptions.

It seems proper, in dealing with this question of "reserves," to base the study on the New York banks. I choose to refer to "the Big Six," of New York—the City, Commerce, First, Park, Hanover, and Chase national banks. The choice is made because the records disclose the remarkable fact that these six banks hold to-day 15 per cent. of the entire reserves required from the 6,600 national banks of the country. To such a length has the process of concentration run. It is but a step to the establishment of a single central bank which shall hold the entire reserve of the country.

Each week the banks in the Clearing House make a report of their condition. It is not a report, as published, of condition on any one day, but is made up of the averages on each day. For instance, the "loans" reported are the average amount of loans through the week, and not the amount on the day the report is made up. By way of a study, the following statement showing the number of times each of "the Big Six" banks reported its reserve

below the 25 per cent. in the calendar year 1906, will be of interest:

BANK	GROUP	TIMES BELOW 25% RESERVE
First	Baker	19
Hanover	Stillman	6
Chase	Baker	5
Commerce	Morgan	4
City	Stillman	3
Park	Independent	2

Of the big banks, then, the First National is by far the most flagrant offender in the New York list. Out of a possible fifty-two times, it reported its surplus below the legal requirement nineteen times.

It may be noted, in passing, that the City Bank prides itself upon the fact that it keeps up its reserve. It does maintain its reserve better than most of the big banks. It also has a hard and fast rule that it will not lend money at a rate higher than the six per cent. rate established by law. Candor, however, compels me to state that the Lincoln National, under the Stillman influence, reported in twenty-five weeks out of the fifty-two in 1906 that its average reserve was below the legal rate. Considering the boast of its big sponsor, that is a sorry showing.

THE FARCE OF GOVERNMENT INSPECTION

Five times a year the Comptroller of the Currency has the right to call upon the national banks for a full statement of condition. The times are not specified in the act. It is supposed to be a sudden, unlooked-for call, to take the banks by surprise and so gain a fair idea of the general nature of the business. It has come about, however, that the times for these calls are pretty well understood by the banks—so well, in fact, that the banks get ready for them by strengthening the reserves. This past autumn the call was delayed. The Government did not send it out when expected. The banks dressed up for the occasion, but they had to wait. Comment was quite acrid. The following, from the Rand-McNally *Bankers' Monthly*, is about as naive a bit of literature as could be imagined:

"During the last week in August telegrams were received in Washington complaining that the delay in making the call was causing serious inconvenience in commercial circles. The banks, in order to make a good showing, naturally hold on to as much of their reserve as possible in anticipation of the regular call, immediately after which large amounts of the money are invariably placed at the disposal of business."

This is the process technically known as "window-dressing." It would be rather interesting to know what bank presidents sent those innocent telegrams to Washington. In effect, each telegram meant just this:

"Please hurry up with that call, for I want to break the law as soon as I can, and I can't until you make that call!"

The First National Bank has always claimed, with a good deal of justice, that when the normal rate for money is above 6 per cent. the bank should use its reserve to ease the tension. Some other banks take an opposite view, and struggle to maintain the reserve even when, by so doing, they accentuate the feeling of panic that often results from high money. This discrepancy of theory and practice is due, of course, to the utter inadequacy of the law. It accounts, in large part, for the marked differences between the banks, shown in the table on this page. There ought to be a clear, definite, legal basis for the maintenance of reserves, or the non-maintenance of them, so that each great bank will not find it necessary to make a theory of its own. What that basis may be is a question worthy of long debate.

Reserves are supposed to be a safeguard in times of stress. I should not, therefore, criticize the drawing down of the reserves at such times. It is the habit of raiding reserves when it is not necessary to raid them that seems reprehensible. That the habit has spread in New York during the past ten years there seems no reason to doubt. This, the law must correct, even though in such correction it seem to meddle unduly in the business of several great and uniformly successful banks.

I do not propose to go into a detailed analysis of the methods of all the national banks in New York. It would be a long and uninteresting task. Once a year the bankers of the country come together, or may come together if they choose, to talk of "ways and means." It is for these bankers, members of the American Association, to look to the reputation of their calling. They know the abuses of the banking law. They know how to check these abuses. Will they do it?

[In the next article of this series, the position of the trust companies of New York will be analyzed in detail. The study is based on the events of October, 1907, but goes back to ultimate causes.]

THE NEW SCIENCE OF BUSINESS

FLAT-TOP DESK PHILOSOPHY

BY

LUTHER H. GULICK, M. D.

NOT long ago, in the office of a leading American publishing house, I noticed that the roll-top desks had all been removed, and that the entire force, from stenographer to head of department, sat before desks with flat tops. When I asked about it, they said:

"It expedites business. Suppose there's a claim that must be passed along from one hand to another until it has been corrected and O.K.'d five different times. Now if that claim can get stuck in a pigeonhole anywhere—a thing that used to happen right along—it's likely to be forgotten. The result is delay and confusion and ragged business generally. But if there are no pigeonholes and it has to lie in plain view on top of the desk, it can't be forgotten until it's attended to."

"But it must make a mess on the desks," I objected.

"That's the very point," was the answer. "No chance for a mess. We get things cleaned up."

Since that conversation my own desk has been a different affair. The occasions have been few when I left it at night without knowing exactly what was there and why it was there and what was to be done with it next. At the end of each day I can render a rough inventory of the contents. The convenient dark corners where I liked to stuff things out of sight—out of mind—do not exist any more.

For those who have ears to hear, the flat-top desk has a moral. It illustrates a principle which is applicable throughout one's mental life. It stands for definite, clean-cut thinking—thinking that goes straight for its mark and arrives somewhere before attacking anything else—thinking without loose ends.

A man is liable to have a lot of unlabeled pigeonholes in his mind where all sorts of unassorted, half-finished jobs lie around collecting dust. The condition is not wholesome. It makes for uncertainty and vagueness—incomplete control. The man who never gets his desk—or his mind—cleared up, but is always stuck somewhere in the midst of semi-materialized plans and responsibilities, is courting insanity.

THE WAY THAT LEADS TO MADNESS

Dr. Adolph Meyer, one of the most distinguished alienists of the present day, has made the observation that among the untransmitted causes of insanity none counts more prominently than the big idea, the idea that never can be fully made over into concrete reality for the very reason that it is so big. The far-reaching scheme, the still unsubstantiated venture, the revolutionary theory, the momentous but unperfected invention—all have it in them to take possession of a man; they hold him day and night; he can't get away.

That the man with the small, everyday ideas keeps his balance is not primarily because his nervous system is of a more stable character—though that may be true, too—but chiefly because his little ideas work out directly and successfully: he can get them done with and out of the way. His jobs are finishable. He enjoys good mental health.

The man who is working over a big, complex, engrossing proposition shuts himself away from liberty until he puts his *Q. E. D.* to the end of it. His thoughts are never free. The thing in his mind tends to grow more real to him than the concrete things outside; it drives other realities out of the field; it upsets his mental equilibrium.

The way back to healthy-mindedness is to be learned from the man with the finishable jobs. His habit of definite accompli ment—and then freedom—must be acquired somehow. But this is not to be done by sacrificing the big affairs on the docket. It's a matter of getting at them right.

The big problems can be split up. They are always reducible to fractions—at least, for

practical purposes they are—and each fraction can be dealt with separately. We do not need always to keep ourselves staring at the whole, worried by its magnitude and its difficulty and its imperative claims.

Taking one's work in reasonable "stints" is the thing that I am recommending: bundles of work that can be finished. Set yourself at some definite subdivision of the total problem —something that you are able to put through in a piece; and then put it through. Make the breaking-off place sure. When you reach that point, you have a specific accomplishment to your credit; and that's an encouragement for the thing that's ahead.

If you have ever gone on walking expeditions, you know how important it is to make goals. Suppose it's a tramp of three hundred miles or so that you are setting out on. Your first impulse, especially if your time is limited, is to walk as far as your strength allows each day. But that does not work. Every afternoon you have to decide afresh when you have really reached the fatigue point. Perhaps you are not really tired enough to stop yet, you think. On the other hand, perhaps you are. How determine? You think of the hundreds of miles still to be covered, and you decide to keep on a while longer. A day comes when you are excited or unduly ambitious and, without perceiving it at the time, you overwalk yourself. The subsequent night you do not rest; fatigue becomes cumulative; and your pilgrimage is likely to end in disaster.

Old trampers get the habit of studying a map carefully before they start, blocking out the route into reasonable walking days, with ample allowances for grades and bad roads and the like. Of course the plan often miscarries in certain details, but in its main outlines it is practicable; it can be followed, and it works where the plan of go-as-you-please fails.

Fatigue does not come so quickly when you have set your eye on a certain definite point of attainment, something you know to be within your compass. The proximate goal is as much a psychological necessity as the ultimate goal.

You remember how Christian, in the "Pilgrim's Progress," was traveling all the time toward the Celestial City; but along the way there were places of rest and refreshment: the Interpreter's House, and the House Beautiful, and arbors and shelters and places of lodgment in abundance.

A conclusion may be arrived at by either positive or negative means; the main thing is that you do arrive at it. Sometimes it happens that you run foul of a problem that you can't solve at all. In that case you are better off for admitting to yourself that it's beyond you. That is an intelligent breaking-off place. You can let the problem go by, at least for the present, without further concern.

The finishable bundle habit guarantees between-strain intervals. When you quit your desk at night with the assurance that everything has been brought to a definite stopping-place and that to-morrow you'll know just where you stand with reference to the day's work, you can really rest. It's a very different state of mind from the one that comes when you "yank" down the cover over a mussy assortment of odds and ends, and sneak for home. "Something accomplished, something done, has earned a night's repose"—that's what they said, you remember, about the Village Blacksmith; and a truer word was never spoken.

A CLEANED-UP DESK CLEARS VISION

It's precisely this *repose* that gives you the first lien on to-morrow. You have a chance to stand off and take a look at things and size them up. You can estimate cash values. You see things in perspective.

The objects in the immediate foreground may not be so important as they look when they are crowding up on you. Once at a distance from the clamor of the nearest responsibility, you can judge whether its claims are really what they sound like. The tendency is always to submit one's self to the loudest call—that is, the nearest call—on one's attention. Look at the sad, familiar figure of the housewife darning stockings, tidying up the room, performing such-like tasks all day long, and never seeing that if she cares to retain the comradeship of her children as they grow up she must let some of these things—important enough for that matter—make place for study or sport or reading or music or sheer, deliberate friendliness.

Just so the uncleared desk swallows up a man. It is a desk without distinctions, where important and unimportant, small duties and great, lie in hopeless, all-engulfing chaos. This disastrous plight is preventable.

The greater the pressure under which a man works, the greater the actual count of his responsibilities, the more essential is it that he should be able to get away from them. It is freedom that brings perspective. If it is

necessary to let a lot of other things go in order to make sure of these intervals of freedom—let them go.

The consciousness of freedom is a thing that stays there in the back of your mind, even when you are smashing and driving away at your work; and it's a saving knowledge. Rest is a background for the most effective work. It brings confidence, helps you keep balance—this sureness that there's a rest-time ahead which nothing short of fire and flood and another break in stocks can disturb.

The flat-top desk, cleared of the day's débris, clean and fresh for to-morrow's new duties or for its new instalments of old duties, is a symbol worth bearing in mind. The brain of the man who has taken the moral to heart keeps fresh and clear because it earns its night's repose. Hang-overs and vague worries and loose ends in thought are reduced to a harmless minimum.

A CLEARING HOUSE FOR MERCHANTS' ACCOUNTS RECEIVABLE

THE legitimate expansion of many a business is checked by inability to collect its accounts receivable, owing to the scarcity of loanable funds that can be devoted to merchants' uses.

Most of the funds that are loaned by financial institutions are the property of their depositors, and in times of great business activity the banks must keep such funds well within call in order to meet the demands of depositors.

The complaint that Wall Street brokers can obtain almost unlimited accommodation for speculative purposes while merchants cannot discount their notes for "legitimate" use is undoubtedly true; but a reason for this, based on sound principles, is little understood. The daily transactions in stocks occasion a constant borrowing and repaying of loans that enables the banks to loan "call money" on one day and demand its repayment the next, or any succeeding day when required. Millions of money are loaned in this way and brokers are daily paying off loans and re-borrowing elsewhere. The greater part of the stock transactions is carried on in this way, while the smaller part is covered by "time" loans — i. e., loans for thirty days, or sixty days, or ninety days, or four or six months.

From the character of a merchant's business, it is quite impossible for him to conduct his transactions on so unstable a supply of funds. His demands on the bank are always for a "time" accommodation, and if his goods have not been sold or his collections have not been made, he must have an extension; whereas, when the bank calls on the broker to pay, pay he must or his collateral is immediately sold. This leads to the thought — Is there any way in which accounts receivable can be made more liquid than under the present lack of system?

In some of the cities of Germany the relation between bankers and merchants is scientifically closer than in this country, and merchants furnish to their banks periodically a list of the names of their creditors and debtors; and, in so far as may be, a pairing-off, or clearing, is effected.

An expansion of this method, resulting in the establishment of a commercial clearing-house, would not pair off all debts, but it might "liquefy" a sufficiently large percentage materially to benefit the commercial world in times of "close" money.

The details of a plan of this kind would require much thought and careful working out, but the practicability of the scheme looks promising.

The old minstrel joke of half a dollar paying the debt of the whole troupe through the discovery that each member owes the other that amount is on this principle of clearing. To illustrate by an even amount how a chain of debt could be cleared, the following example is given.

A	owes	B	$500	on	note.	(Can't pay)
B	"	C	"		"	"
C	"	D	"		"	"
D	"	A	"		"	"

No one of this chain, perhaps, knows of the other's debt; but if this were recorded in a clearing-house, A would be instructed to hand the note of D to B; B to hand it to C, who would hand it to D, each taking back his own note — and thus all the debts would be settled.

Nothing so simple as this, either as regards amounts or direct chains, would probably occur in clearing, but some system that would lead to pairing-off would be beneficial and better than an utter absence of system, as at present.

The World's Work

WALTER H. PAGE, EDITOR

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THE WORLD'S WORK

JANUARY, 1908

VOLUME XV

NUMBER 3

The March of Events

THE New Year comes hopefully, if not with aggressive cheerfulness. Most men in the United States are better fortified against misfortune than they were, say, five years ago. If the old year brought some practical troubles, it brought good crops; it gave us, till its closing months, remarkably profitable business opportunities; it was a year of social and educational progress, of large benefactions for the betterment of life, of much generous endeavor, of development along all lines of normal growth.

The financial setback of its closing months is still felt and will be felt for many months. Yet even the effects of that are less than many reasonable men feared. After all, it was a bankers' panic rather than a people's panic; and the actual damage was less than the threat and fear. Business has had a "slowing-down," but the country is not strewn with wrecks. The financial world is sound. Very few banks failed, surprisingly few, and most of the failures were due to dishonest management which, of course, could not withstand the publicity and the pressure that doubt forced on them. Not a single national or state bank of first-rate importance or of more than local influence had failed by the middle of December. This is an astonishing exhibition of financial stability. Looked at in comparison with other panics, this one has shown the fundamental strength of our people in a remarkable degree, in spite of bad systems of currency and banking. And—not to be forgotten—these very troublesome experiences brought out the comradeship and kindliness of the American character. Many a financial and business man stopped in the rush of his own worries to help unfortunate friends. Even in Wall Street, where human nature is human nature still, voluntary aid was given, sometimes to the danger of the giver, to help friends avoid disaster. And this is a good memory and a good mood to begin the New Year with.

THE NORMAL MAN IN AN ABNORMAL TIME

IN this abnormal financial time, let us recall what kind of man the normal American citizen is, and take his point of view.

The life of a normal man is made up of many activities, such as the pursuit of his trade or business or profession, the care of his family, the doing of his duty to his community, the keeping of his health, the improvement of his mind, and the following at a less or greater distance of some absorbing ideal. He works to do the thing that he sets the greatest value on — to become an authority on some subject, to excel at golf, to amass a fortune, to be elected to a political office, to solve an economic or social problem perhaps, to make a scientific discovery, perhaps to restore the tariff or to make divorce laws uniform or to introduce common sense in marriage. Every thousand normal and active men have a thousand things that their hearts are set on and their energies are bent to. Just because of this great variety of ambitions and activities, life is especially interesting in our time and country. No matter what you are interested in, you may find companionship and rivalry.

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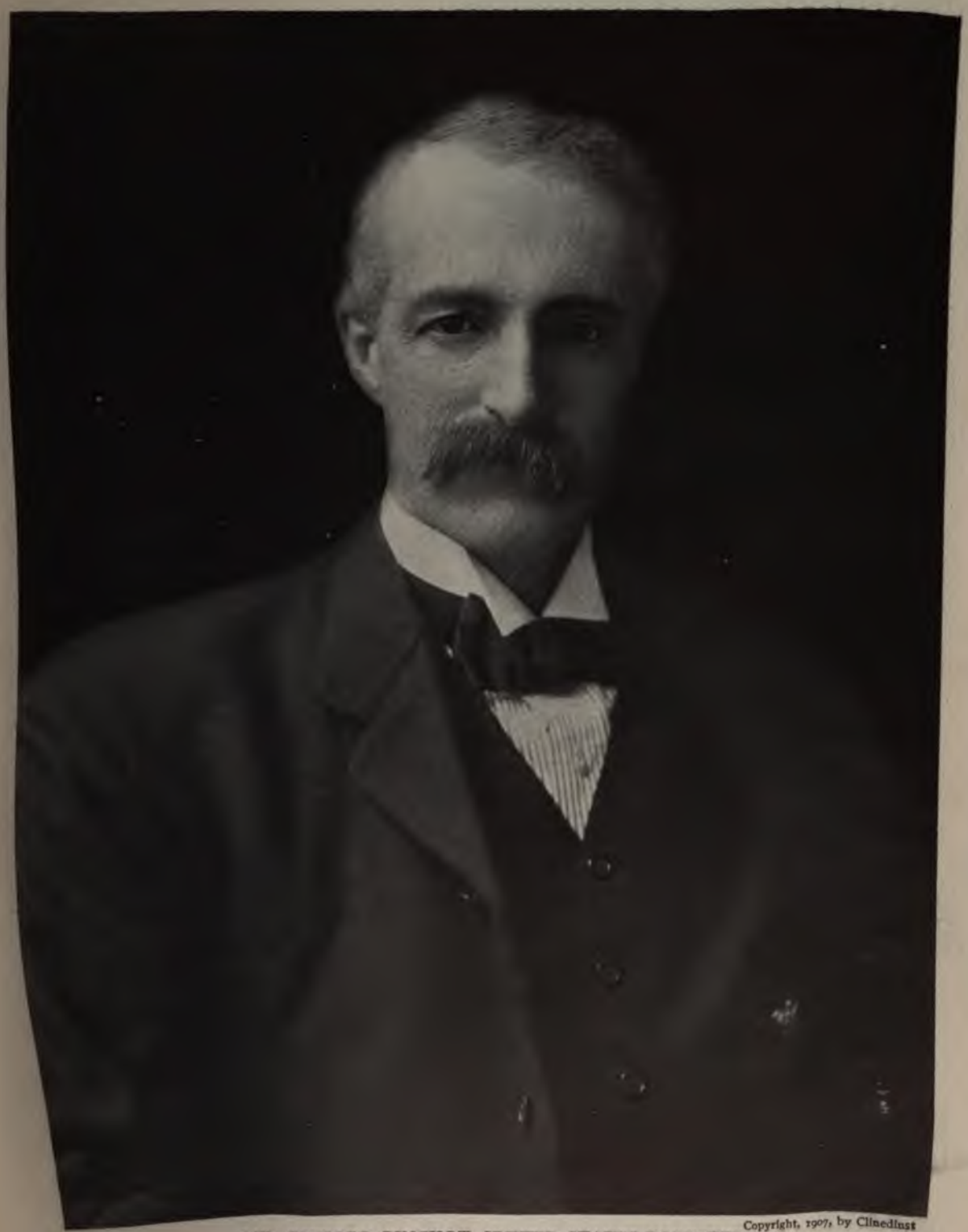
MR. JAMES R. GARFIELD, SECRETARY OF THE INTERIOR

UNDER WHOSE DIRECTION A NEW COMMISSIONER OF THE LAND OFFICE IS TRYING TO STOP LAND SPECULATION AND FRAUDS, AND THE RECLAMATION SERVICE IS TURNING VAST TRACTS OF ARID LANDS INTO FARMS

[*See "The March of Events," page 9749.*]



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MR. GIFFORD PINCHOT, UNITED STATES FORESTER

WHO MORE THAN ANY OTHER MAN IS RESPONSIBLE FOR THE ADMINISTRATION'S POLICY OF CONSERVING OUR TIMBER. UNDER HIM THE SERVICE IS MAINTAINING THE NATIONAL FORESTS SO THAT THEY MAY CONTINUE TO SUPPLY TIMBER FOR ALL TIME

[*See "The March of Events," page 9729.*]

If you look back over your life for a period, or if you look around you, you will discover that any normal man of our time touches life at more angles—has a wider and richer experience—than most men could have at any preceding time. In a word, life under modern conditions is wide and varied to a degree undreamed of in old times.

And for the successful and efficient man modern life has a great variety of conveniences. The machinery of organization saves us time and trouble and ministers to us every hour of the day—from giving us tropical fruits for breakfast and the news of the world for a cent, to caring for property by trust companies and making it possible to travel around the world on a single ticket. This same perfect machinery of modern organizations insures our health—if we are wise—prolongs our lives, reimburses us for silver taken by the burglar, insures our crops against cyclones; it makes life and fortune safe and leaves us time and mind to give to the most important or the most pleasant business that we select to do. And we take this wide variety of interests and activities for granted. We take for granted, too, all the conveniences of modern life. We have a right to them all, and we live our lives so as to profit by them.

Besides our wide range of activities and interests and the multitude of conveniences, we take for granted and depend on efficiency of service by the great machinery of modern life. The newspaper appears every morning; the train comes on schedule time; the man who owes you money pays it when it is due; and so on. And we have a right to count on the efficiency of our great organizations. We plan our lives by taking this for granted.

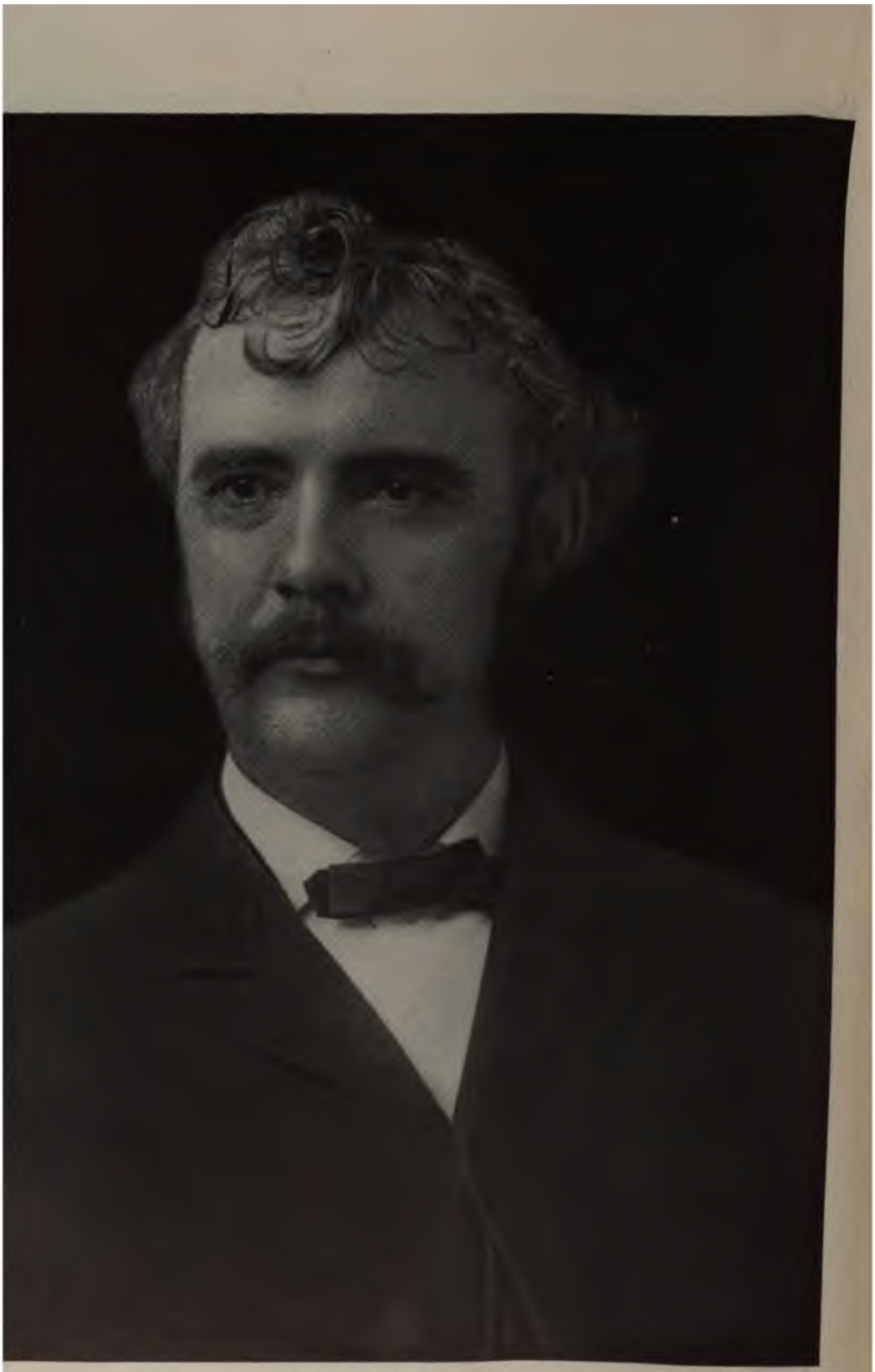
II

Now this statement of the variety of the activities of the normal efficient man, of his multitudinous conveniences, and of the elaborate organization of things for comfort and convenience is a dull commonplace. Every man who deserves to live takes all these things for granted and goes on with his life, profiting by them.

He goes on till—all on a sudden—what is supposed to be, and what surely ought to be, the best-organized, the safest, the most efficient machinery of all stops; the whole financial machine stops as a clock stops when the earth quakes. You may have put money into the bank. Like as not, you couldn't get it the next day. You may own a good bond; like as not, its price falls, falls, falls—without any reference to the value of the property or the earnings of the business that it stands for. Why? All the economic doctors tell you why; but hardly any two agree and not one makes an explanation that is so simple as to be obvious. There 's something "mysterious" about it. Nobody quite understands why.

Then you discover that in a jiffy the variety is all gone out of life. Instead of pursuing his bread-earning work calmly and devoting some of his time to other things, everybody you know turns his mind to only this one subject. Will I fail? Is my money safe? What about the future? No matter how skilful or efficient a man may be, he is set to wondering whether he will ever get any more profits or earn any more money, or have a chance again to go on in a normal way. Life loses its variety of interests and diversions, and one vast fear darkens the horizon; and men think so much about money that greed assumes the aspect of a virtue.

And the very conveniences of life are threatened. True, your morning paper continues to come; but you wish that it wouldn't, so full is it of tales of disaster, of the suicides of financiers, of rumors of more trouble, of the slackening of industry. The very conveniences of life become a nuisance, and one of the greatest conveniences of all—the banks and the trust companies—seemed likely to fail us. As for their doing their work with a silent efficiency that ought to be taken for granted, they utterly fall short; or (which is much the same thing), they suffer from fears that they may fail. For the time being this important part of the machinery of life *is* a practical failure. It causes you trouble rather than gives you help. You may live in a town in New Mexico, or you may live in Pittsburg—wherever you live, you had for a time fiat money offered you. You were told that the failure of certain banks and trust companies in New York had unsettled the financial world, and because of the crimes and mismanagement of a few men in New York you must take a printed promise of a dollar for a dollar—in New Mexico or in Oregon. What on earth had your town and your bank to do with a handful of bad men who live across the continent from you?



DR. W J McGEE

SECRETARY OF THE INLAND WATERWAYS COMMISSION, WHICH IS INVESTIGATING THE RIVERS OF THE UNITED STATES TO DETERMINE HOW THEY MAY BEST BE UTILIZED FOR THE GENERATION OF POWER, FOR NAVIGATION, AND FOR IRRIGATION

[*See "The March of Events," page 9799.*]

ere told that the President of the tes had acted as a bull in a china- roken all the vases of credit in the You couldn't see the logic of such tion; but, no matter, you got the your life was stopped in its nor-, and you had time to wonder th all these things could be.

read that a few other men, strong, threw their millions into the hole confidence in New York and that would come right—that Mr. d somehow done something that little while make your credit dollar llar, and still you wondered how n in New York could affect the Iairs, down to the value of a local our remote town; and you were that the explanation which was e to you by your editor or your the right explanation. It wasn't ligible. It seemed confused. It ple and obvious.

III

ot a grotesque nor an exaggerated of the feelings of most men of and of normal activities in the tes a month ago; and the feeling ted. If, at the very flood-tide of s era, when the crops are bounti- the mischief happened right at e, too), when our factories and all been making money, when the d more products to haul than they locomotives to carry them, we were n suddenly to halt because some- the matter with money or with ly this is proof that this part, at r machinery of civilization is far t. This is the sort of experience ntier communities, not the richest aborately organized nation in the d then the damage was supposed ded as mysteriously and almost as it had been inflicted. What won- any simple folk ask themselves if nancial machinery be not so or- conducted that a few great men ranks with it for their own profit hey choose to do so.

g is wrong somewhere, be it our stem, be it our currency, be it the on of capital, be it the too rapid ur industries, or be it old wars on the other side of the world—whatever it be, something is wrong in our organization of things. Other countries have not, in recent years, at least, suffered such sharp attacks to the unsettling of all activities. Why should our country?

Yet, when we ask these questions, the loudest voices that we hear are the voices of quacks who have heal-alls for every ailment of civilization, and there is not an authoritative plan of prevention that all sensible men will agree upon. Somebody somewhere has too much power for good or for mischief under our present system of financial organization. Or, have we a rational plan of financial organization, at all? Till we get beyond the reach of such panics as this last one, we can hardly boast of our financial system. The whole experience seems like a nightmare or a revel of idiocy.

IV

And the worst of it was not the fall in values nor the sudden brake put on industry, bad as these were. To go back where we began—to the state of mind and the plan of life of a normal man—we see how such men's lives were swung from their usual orbit. Men who gave only proper thought to money-getting—regarding money as a tool to do worthy tasks with—were thrown off their balance. Everybody went money-mad for the time being. No company of insane men presents a more pathetic spectacle than the panic-stricken throngs that made runs on certain banks or that rushed frantically about the financial district of New York. The thought of the whole people—even those who had no deposits in the banks—was on money, money, money; and by the time some wretched bank presidents had killed themselves in New York, the people in interior towns couldn't imagine where all the cash in the country had suddenly hid itself. Everybody's mind was on money. It was a sordid and vulgar experience, a degrading diversion from normal activities and from a life of decent mental poise and steady work. Thus a large part of the well-balanced persons in the United States whose lives are not given to the race for wealth seemed to justify the taunt that we are all money-mad; and this by no fault whatsoever of the normal part of the country's population.

THE COUNTRY AS A CRITIC OF NEW YORK

THERE is a widespread notion that the masses of people in the interior feel very bitter toward New York and especially toward Wall Street, upon which they lay the blame for financial flurries and panics, rather than upon our currency or banking system. Ex-Senator Stewart, of Nevada, for example, was recently quoted as saying that at some time we should have a civil war between the East and the West. It is hard accurately to distinguish temporary emotions from representative public opinion on such a subject. But side-lights like the following have some interest.

An Eastern college president, who during the weeks of the panic visited institutions of learning in eight or ten states of the Mississippi Valley, found almost everywhere the feeling that the seat of the wrong is in New York —a more or less vague but persistent notion. It is in New York that the great rich men live, that the great financial transactions are carried on, that the great accumulations of capital are controlled, and that the most conspicuous financial wrong-doers operate. Therefore, the main mischief is done there and thence spreads throughout the land; and many educated people were bitter toward New York.

A salesman for a wholesale house who traveled through Michigan and Ohio during the weeks of highest excitement found his customers in the cities and larger towns unwilling to buy anything, and some of them even in a mood to cancel previous orders. They were in a panic of uncertainty. But, as soon as he went to small towns, where the merchants deal directly with the farmers, he took good orders. There was no uncertainty there—except that the farmers themselves were somewhat anxious about the money that they had in banks. The people in the small towns and in the country had no panic and no especial trouble, and they had no quarrel with anybody. In the larger towns many persons blamed the newspapers. If they had not kept crying panic, nobody would have known that there was a panic. The local bankers had anxious days because much of their money was in New York or Chicago; and, if it should turn out that they could not get it quickly, they might face disaster.

But they did get it. Few persons realize what enormous sums were sent into the interior from New York. For instance, during the five weeks ending November 22d, New York sent to the interior more than 83 million dollars. During the corresponding weeks of 1906 it sent only 15 millions and in 1905 less than 13 millions. In a word, New York sent inland 5 millions more than all the gold imports and all the Government deposits of that period. Much of this money was, of course, money that belonged to the interior; but when it was sent home so quickly and in such an enormous volume, the interior has no reason to criticize New York on that score. The hoarding of money was done quite as much in the interior as in the East, and apparently much more.

It must be remembered, too, that the inland towns and cities sent their accumulations to New York in the first place—and they send them continually in normal times—in order to receive the high rate of interest that can be got on call loans and in other ways. When they send it in periods of profit, they have no right to complain about its being here in times of danger. And, whatever be the temporary outcry, the accumulations of the country will come to New York again when money is higher here than in local markets. Economic laws overrule sentiment.

It is the interior bankers and business men, in fact, who make New York what it is. It is in great measure their money—the money of the country in general—that goes to make the large accumulations in the financial centre. It flows in obedience to an economic demand. But it flows so easily under normal conditions that much money which might profitably be invested at home comes away into these great reservoirs. For instance, many an interior town which ought to improve its own traction service, waits until a promoter comes from a big city and buys it and issues bonds and improves it and transfers its real ownership to some big money centre. Local men and local money ought to have done the task in the first place and kept all the profits at home.

This financial controversy between the country and New York is somewhat like the controversy about state and Federal functions of government. When the states neglect their business till the General Government has to do it, criticism of the activity of the central power is not quite gracious.

A great financial centre is as necessary as a centre of general government. Both are, in the main, what the people make them or

permit them to become. Each easily develops abuses of power—especially the financial centre. But, while each great centre is necessary to do the larger tasks, local activity and pride ought not to leave local tasks to be done away from home. Every community ought to be a real, if small, centre—both financial and political—so far as possible self-governing and independent. And in finance this state of things is coming to pass faster perhaps than the public appreciates.

But the unthinking financial outcry against New York is really a cry against a centre to which the people themselves in large measure contribute their wealth, in obedience to the law of the greatest profits and the greatest convenience.

THE PRESIDENTIAL YEAR AND ITS OUTLOOK

WE ARE come again to a year of Presidential campaign. It is a high function of a great democracy to elect a head, and a campaign is a means of educating the people in government; and it might be so conducted as to have a far more serious educational value than it usually has. But, conducted even as it is, it is a valuable experience. We ought, therefore, to welcome a national campaign year; but most men do not, because the emphasis that is put on politics for six months or more distracts us from our ordinary pursuits. The newspapers put big headlines over political articles, day after day, week after week, for half a year or more; men talk chiefly of candidates and "issues"; the financial and commercial world gossip and speculate about the effect of the election on business; and this undue concentration of attention on one subject usually causes some slackening of industry. Still, it is a great experience that we have every four years, and the incidental disturbances of the normal life are more than paid for by the keeping alive of the popular interest in government.

II

Unless all signs fail (and sometimes all signs do fail), the nominees will be Mr. Bryan and either Mr. Taft or Mr. Hughes. Mr. Bryan will have no chance of election; and his nomination, if it be made for the sheer lack of another man, will be equivalent to the surrender of his party before the contest begins. But a third nomination and defeat will have at least this result—surely the Democratic party will then have done with its strange subjugation by him, and it will have a chance, with new men and new earnestness, to reëstablish itself and most likely to come again into power.

It is too soon to make any forecast of the Republican nomination. On the surface of things, Mr. Taft seems to be the "logical" candidate. But he has no organization working to secure the nomination and he will have none. For the moment the superficial observers may conclude that his complete identification with Mr. Roosevelt's administration is a disadvantage to him. Yet for several elections complete identification with Mr. Roosevelt's administration has been the most popular help that a candidate for Congress could have. And the identification of Mr. Taft with the President's policies is not an inheritance. It is the outcome of Mr. Taft's own personality and experience and convictions. He would have had the same policies if Mr. Roosevelt had never developed them. His practical experience and temperament, too, would cause him to pursue them in a way somewhat different from Mr. Roosevelt's — as the two men are different in manner and method.

Neither has Governor Hughes an organization at work for him, nor will he have. The nomination must come to him. He will not go after it any more than Mr. Taft will lay down his duties as Secretary of War in order to seek it. The Republican party, therefore, is as fortunate and as strong in the men who stand out as possible nominees as the Democratic party is unfortunate and weak.

III

The insulting talk has gone on in many quarters about Mr. Roosevelt's "playing hide-and-seek" (this is Justice Brewer's phrase) with the Republican nomination. The President has done nothing to warrant such an accusaion of bad faith with the people. On the night of his election as President, without any pressure from without, and without any reason except his own wish, he said this to the people of the United States:

"On the fourth of March next I shall have served three and one-half years, and this three and one-half years constitutes my first term. The wise custom which limits the President to two terms regards the substance and not the form. Under no circumstances will I be a candidate for or accept another nomination."

That was not the expression of a mere impulse of the moment, nor of a merely personal feeling. It was more than that. It was a deliberate declaration of approval of a custom grown so strong as to have the force of law. It was, moreover, the formulation of an honorable and wise policy. It was as much as to say: "Whatever policies I further, whatever men I appoint, whatever I do as President for the next four years, I wish it distinctly understood by all the people that I shall do nothing with the slightest reference to my continuance in office." That was wise, frank, manly. And it was a voluntary and solemn compact with the people. The people accepted it in the same frank way in which it was made. Mr. Roosevelt's acts and appointments have been judged, till the outburst of this recent ungenerous and unjust criticism, by the people on their merits and not with reference to his personal advancement. Many preceding Presidents were embarrassed by the ever-present suspicion that whatever they did was done with reference to a renomination. Mr. Roosevelt relieved himself of that at one stroke. When the activity of some of his friends made others question his sincerity, he called for the newspaper men, repeated the declaration made on election night, and added: "I have not changed and shall not change the decision thus announced." This positive statement has been accepted as final even by those to whom the former declaration was not sufficient.

If Mr. Roosevelt should yield to the clamors of his silly friends and to the nagging "dare" of his persistent enemies and seek or accept a renomination, he would be guilty of a breach not only of a wise custom but of a definite compact made voluntarily with himself and with the people; and no compact or promise that he should thereafter make would be taken seriously. He would forfeit the confidence of thousands of the best men who have approved and applauded his unswerving devotion to the public welfare regardless of his personal fortunes—his unswerving devotion to the public welfare even in his mistakes of judgment, of method, and of men. His strength has been this very quality—his vigorous work for the public, his disregard of special interests. To yield now to the personal flattery of another nomination—if it should by an idiotic panic be offered to him—would be to throw away the enormous moral force of his whole career as President; and he is not the man to make such a mistake nor to show such a fundamental weakness of character in the very respect wherein he has been strongest.

A MOVE FOR A SOUTHERN PRESIDENTIAL CANDIDATE

A "CONVENTION" was held at Nashville, Tenn., several months ago at which a committee was appointed to set forth reasons why the Democratic party should nominate a Southern man for the Presidency this year, and Ex-Governor James D. Porter is chairman. The committee published an address that puts the case strongly and well—that most of the party's successes have been under Southern leadership, yet for half a century the South has had no candidate, and no national nominee since Polk in 1844; that this wish for a Southern man is neither personal nor sectional; that it is in behalf of no particular candidate but is meant to emphasize the unity of the nation; that no man should be nominated merely because he is a Southern man but that a Southern man should be found who stands "preëminently for statesmanship and executive ability"; that the Democracy of the South is "free from the domination of corporate interests and predatory wealth"; and that the nomination of a proper Southern man would revive such a spirit of national feeling and hopefulness as "would develop men who would measure up to the standard of the founders of Democracy and of those times when Southern statesmanship attracted the attention of the world."

Now that is well said. And at the very worst, no Southern candidate could have been worse beaten last time than the candidate that the party accepted from New York, or worse than the party will probably be beaten this year with a stale candidate from Nebraska. For practical reasons, therefore, there is nothing to lose by this Tennessee programme; and for other and better reasons there would be an immense gain if a man of such character and qualities were found as would once more strike a note of sincerity in party life.

This Tennessee platform is the stronger for being impersonal; but, before it can be carried out, its purposeful omission must be supplied, an omission that is the gist of the whole matter. Who is the man? When the right man appears all the reasoning of the programme will be not only sound but (what is of more importance) it will be pat and effective.

Millions of men in the Northern and Western States who are Democrats or have been and would like again to be Democrats would welcome the candidacy of such a Southern man as this Tennessee address describes; and the fact that he was a Southern man would not be a disadvantage. It would probably act as a definite advantage. All that is needed is the right personality—a national personality of sincerity. And these millions of men in the North and West who were once Democrats and would like to be Democrats again are necessary for the success of the party. The South alone cannot elect.

Perhaps as strong a man as the South now has in public life—surely as safe a man—is Mr. Culberson, of Texas, the new leader of the minority party in the Senate. He has not the defect of flying off at a tangent; he does not put himself forever on the defensive; and to act on the defensive has been the misfortune of Southern political thought and temperament these fifty years.

THREE VIEWS OF THE TARIFF

I

The President

PRESIDENT ROOSEVELT, in his message to Congress, in December, wrote about the tariff in a tone that undoubtedly meets the approval of the majority of business men. He said:

"This country is definitely committed to the protective system, and any effort to uproot it could not but cause widespread industrial disaster . . . But in a country of such phenomenal growth as ours it is probably well that every dozen years or so the tariff laws should be carefully scrutinized, so as to see that no excessive or improper benefits are conferred thereby, that proper revenue is provided and that our foreign trade is encouraged. . . . The question should be approached purely from a business standpoint, both the time and the manner of the change being such as to arouse the minimum of agitation and disturbance in the business world and to give the least play for selfish and factional motives . . . This means that the subject cannot with wisdom be dealt with in the year preceding a Presidential election, because, as a matter of fact, experience has conclusively shown that at such a time it is impossible to get men to treat it from the standpoint of the public good. In my judgment, the wise time to deal with the matter is immediately after such election."

He recommended the repeal of the duty on works of art, the importation of which "should be encouraged in every way"; and he wrote also:

"There should be no tariff on any forest product grown in this country and in especial there should be no tariff on wood pulp."

II

The Democratic Ex-President

A member of the staff of THE WORLD'S WORK made a visit to Mr. Cleveland and asked him whether he thought the principles laid down in his famous tariff-reform message were applicable to present conditions. He replied:

"I should be very glad indeed to be instrumental in bringing the people back toward sober thought on this subject. The message is as appropriate now as when it was written."

Mr. Cleveland also pointed out that the hoarding by the Government of the unnecessary money accumulated under the tariff had given occasion for financial distress.

"The Government," he continued, "should be totally disassociated from business."

One prophecy of the message, that trusts and combinations fostered by the tariff would destroy domestic competition in protected industries, he remarked, had come true.

And he repeated, in slightly different language, what he had said while President, that "a reasonable and timely submission to such a demand (for tariff reform) should certainly be possible without disastrous shock to any interest; and a cheerful concession sometimes averts abrupt and heedless action, often the outgrowth of impatience and delayed justice."

The following are the parts of the message referred to:

"When we consider that the theory of our institutions guarantees to every citizen the full enjoyment of all the fruits of his industry and enterprise, with only such deduction as may be his share toward the careful and economical maintenance of the government which protects him, it is plain that the exaction of more than this is indefensible extortion, and a culpable betrayal of American fairness and justice. This wrong, inflicted upon those who bear the burden of national taxation, like other wrongs multiplies a brood of evil consequences. The public treasury, which should only exist as a conduit conveying the peoples' tribute to its legitimate objects of expenditure, becomes a hoarding-place for money needlessly withdrawn from trade and the

people's use, thus crippling our national energies, suspending our country's development, preventing investment in productive enterprise, threatening financial disturbance, and inviting schemes of public plunder. . . .

"Our present tariff laws, the vicious, inequitable, and illogical source of unnecessary taxation, ought to be at once revised and amended. These laws, as their primary and plain effect, raise the price to consumers of all articles imported and subject to duty, by precisely the sum paid for such duties. Thus the amount of the duty measures the tax paid by those who purchase for use these imported articles. Many of these things, however, are raised or manufactured in our own country, and the duties now levied upon foreign goods and products are called protection to these home manufacturers, because they render it possible for those of our people who are manufacturers to make these taxed articles and sell them for a price equal to that demanded for the imported goods that have paid customs duty. So it happens that while comparatively a few use the imported articles, millions of our people, who never use and never saw any of the foreign products, purchase and use things of the same kind made in this country, and pay therefore nearly or quite the same enhanced price which the duty adds to the imported articles. Those who buy imports pay the duty charged thereon into the public treasury, but the great majority of our citizens, who buy domestic articles of the same class, pay a sum at least approximately equal to this duty to the home manufacturer.

"It is not proposed to relieve the country entirely of this taxation. It must be extensively continued as the source of the Government's income; and in a readjustment of our tariff the interests of American labor engaged in manufacture should be carefully considered, as well as the preservation of our manufacturers. It may be called protection, or by any other name, but relief from the hardships and dangers of our present tariff laws should be devised with the special precaution against imperiling the existence of our manufacturing interests. But this existence should not mean a condition which, without regard to the public welfare or a national exigency, must always insure the realization of immense profits instead of moderately profitably returns. . . . . .

"The reduction of taxation demanded should be so measured as not to necessitate or justify either the loss of employment by the workingman or the lessening of his wages; and the profits still remaining to the manufacturer, after a necessary readjustment, should furnish no excuse for the sacrifice of the interests of his employees, either in their opportunity to work, or in the diminution of their compensation. Nor can the worker in manufactures fail to understand that while a high tariff is claimed to be necessary to allow the payment of remunerative wages, it certainly results in a very large increase in the price of nearly all sorts of manufactures, which, in almost countless forms, he needs for the use of himself and his family. He receives at the desk of his employer his wages, and, perhaps before he reaches his home, is obliged, in a purchase for family use of an article which embraces his own labor, to return, in the payment of the increase in price which the tariff permits, the hard-earned compensation of many days of toil.

"The farmer and agriculturist, who manufactures nothing, but who pays the increased price which the tariff imposes upon every agricultural implement, upon all he wears and upon all he uses and owns, except the increase of his flocks and herds and such things as his husbandry produces from the soil, is invited to aid in maintaining the present situation.

"Nor can the presentation made of such considerations be, with any degree of fairness, regarded as evidence of unfriendliness toward our manufacturing interests, or of any lack of appreciation of their value and importance.

". . . Opportunity for safe, careful, and deliberate reform is now offered, and none of us should be unmindful of a time when an abused and irritated people, heedless of those who have resisted timely and reasonable relief, may insist upon a radical and sweeping rectification of their wrongs.

"The question thus imperatively presented for solution should be approached in a spirit higher than partisanship, and considered in the light of that regard for patriotic duty which should characterize the action of those intrusted with the weal of a confiding people.

"Our progress toward a wise conclusion will not be improved by dwelling upon the theories of protection and free trade. This savors too much of bandying epithets. It is a condition which confronts us — not a theory. Relief from this *condition* may involve a slight reduction of the advantages which we award our home productions, but the entire withdrawal of such advantages should not be contemplated. The question of free trade is absolutely irrelevant; and the persistent claim made in certain quarters that all efforts to relieve the people from unjust and unnecessary taxation are schemes of so-called free-traders is mischievous, and far removed from any consideration for the public good."

III

A Manufacturer

Mr. H. E. Miles, president of the National Association of Implement and Vehicle Manufacturers, wrote in a recent number of *American Industries:*

"I have made money every year out of the tariff graft. Not much, but still a little.

"The tariff barons raised their price $50,000 to me. I made a charge against the jobber of $60,000 and I know that he charged more than $70,000 for the $60,000 he paid me. Before reaching the consumer the $50,000 charge became about $100,000 to be paid by the agricultural consumer.

"The manufacturer who would prosper must make a double profit, one by the shrewd management of his business and another by still shrewder manipulation in Washington.

"When Congress gave us 45 per cent., we needing only 20 per cent., they gave us a Congressional permit, if not an invitation, to consolidate, form one great trust, and advance our prices 25 per cent., being the difference between the 20 per cent. needed and the 45 per cent. given."

"THE MOST WEIGHTY QUESTION"

IN HIS invitation to the governors of all the states and territories to a conference at the White House in May, to discuss means of preserving the natural resources of the country, President Roosevelt wrote, without extravagance, that this is "the most weighty question now before the people of the United States." He continued: "The proposed conference, which is the first of its kind, will be among the most important gatherings in our history in its effect upon the welfare of all our people." Our fathers had the richest continental area ever held by men of our race. They and we have developed it in many ways but in many ways we have depleted it—have wasted forests and coal and the power of streams and the original richness of soil, to a degree that we do not yet fully appreciate. But with all our waste, the land is still rich. Yet it is time we were awake to our wasteful ways.

Of this conference and of the many forms of activity to the same great purpose, two things may be expected—an authoritative statement by experts of definite ways by which we may economically use our resources, and the prodigious emphasis that such a meeting will put on the subject Every public journal in the land will be obliged to discuss it.

Luckily—and this is matter for universal appreciation—there is now in the public service a group of men to whom the administration of this subject falls that have not been matched for zeal and knowledge in our history, nor perhaps in the history of any country. They include (though this list by no means includes them all) Mr. Gifford Pinchot, Forester, who has already recast American thought and changed American character in its relation to forestry and all that forestry implies; Mr. Garfield, Secretary of the Interior, in whose department the reclamation work of the Government is carried on, and under whom a new commissioner is trying to purge the land-office of long-established graft; Mr. Wilson, Secretary of Agriculture, during whose long administration agriculture has made greater progress than it made perhaps during any preceding century; Dr. Holmes, of the Geological Survey, a man of scientific training and of adventure and imagination, who has conducted the important coal tests for the Government, which have demonstrated fuel-values and opened the way to great economies; Dr. McGee, now the secretary of the Inland Waterways Commission, a scientific man of varied attainments whose whole life has been given to the public service and whose recent article on the Mississippi River in this magazine gives a new and broader conception of our whole great valley and of the possibilities of stream management.

To emphasize this awakening appreciation of our natural wealth and to point out the lessons that the Government's work in the West has for the whole people, of every part of the land, THE WORLD'S WORK publishes portraits of these men of surpassing usefulness, and it has thought the space well filled that has been given to articles wherein irrigation and forestry and land administration and the like have been explained and illustrated. This is "the most weighty question now before the people," and a great step in our education and in our national wealth may start from the proper study of it.

TO REFORM BANKING IN NEW YORK

BANKING, under the laws of the state of New York, is in a fair way to undergo a long-needed reform. Governor Hughes recently appointed a committee of six practical bankers to study the whole subject, and to make a report on the points that need change. It is a practical step toward practical legislation. In the coming session it is likely that the Governor will throw all his influence into the fight to "clean house."

The committee went to work on the day it was appointed. It gathered information in all quarters—from bankers, from merchants, from financial critics. It was a working committee,

not title-proud nor technical nor bound in the usual chains of convention.

The net result will be the strengthening of New York's already fairly strong banking system. The savings banks need little, if any, remedial legislation. They stand at the head of the honor list in the country. The state banks and the trust companies, however, have never been what they should be.

The first main question that will come before the legislature will undoubtedly be, "What is a bank?" In New York we have grown accustomed to see department stores, great mercantile houses, even political parties, establishing banks under their personal domination. The evil results of such loose banking may be traced through the panic of October and November. It is time to put a stop to them, before the evil spreads and causes loss to thousands of depositors.

Another striking evil in New York is the lack of proper supervision over the process of winding up a bank that has failed. In the case of national banks, the expenses, legal and administrative, average well under 5 per cent. of the net assets. In New York, they have run above 50 per cent. "Counsel fees," "receivers' fees," and "advisory fees" have been worse enemies of the depositor than even the personal misdoing of officials. It has come to be almost an axiom that the plundering of a bank begins with the closing of its doors. There is room here for a sweeping reform; and it is pleasant to note that a lawyer will take the lead in fighting this evil of the lawyers' profession in New York.

In general, the machinery of bank supervision in New York must be strengthened. The department has been lax—exceedingly lax at times. The functions of a trust company have been allowed to extend beyond all reason. Only recently was any reserve required to safeguard public deposits in such institutions. The lines that properly divide the commercial and the trust banking of the trust company have been obliterated. Speculation has crept in to corrupt the trust companies, so that to-day they are the most dangerous element in the entire banking situation in the state. The lines must be redrawn, distinctly, unmistakably; and the law must be provided with machinery to guarantee that its observance shall be enforced.

Supervision must be defined. More than one hundred institutions in New York City use the word "savings" in their titles, and invite the deposits of savings, yet operate outside the regulation of the savings-bank law. Some of them advertise that they are doing business "under the supervision of the banking department." No institution should be allowed to use the phrase "savings" in its title unless it operate in the full letter and spirit of the savings-bank law, which is possibly the best measure of its kind in the United States.

Fortunately there has been little real disaster. The failure of the Knickerbocker Trust Company, the runs on other trust companies, the closing of the Borough Bank in Brooklyn under distressing circumstances—all these are a small price to pay for the awakening of public feeling for bank revision. The people must, and will, support their Governor in this fight for sound banking. A year ago they would not have given him such hearty support. To-day, thanks to the catastrophe of October and November, the bank reformer marches confidently to victory.

HESITATING TO FACE THE TRUTH

THE commissioners of the fire and life insurance companies of a number of states met together a little while ago to devise some method by which these companies might avoid publishing in their annual reports the market values of the stocks and bonds that they own. They sought a system by which they could conceal the shrinkage of their investments during the past twelve months, which, in some cases, has changed an imposing surplus into an embarrassing deficit.

It was coolly proposed that the statements should be made as of December 31, 1906, completely ignoring the collapse of 1907. In other words, some insurance managers desired to solicit business in 1908 on figures which would show their investments at almost the highest value in history. It would be hard to recall a business proposal made at any time or in any place more foolish than this. The business public cannot be cajoled in so simple a way. There are grim facts, cold records of disaster, to be met. It is the part of manliness to face them with courage, not with flimsy lies. Every man who holds a policy, whether it be on his life or his property, is entitled to know just what the assets of his company are worth, not what they were worth a year ago. Above all else, every man who is asked to take out a

new policy is entitled to know the whole truth about these companies.

It is a pleasure to note that some of the companies steadfastly opposed all attempts to put into effect any policy of concealment. They were wise enough and honest enough to know that concealment—in the insurance business of all places — is the mother of distrust, and distrust is the mother of panic and ruin.

Of course, excuses are easily found. When all others fail, the life insurance companies may fall back upon the tontine policy-holders, whose annual dividends might be imperiled, or at least reduced, if the loss in securities in 1907 were written off. This is a small percentage of the total insurance, and is not a sufficient excuse for any such action as that proposed.

NEW YORK'S TAX ON THE COUNTRY'S TRAFFIC

MR. JAMES J. HILL recently called attention to the ever-increasing cost of living and doing business in New York, which has reached such a height as to threaten industries here and the business of the port. If this cost keeps on increasing, much shipping may have to be diverted to other seaports. There is enough truth in this forecast to warrant serious attention. The tax on transportation is enormous—probably higher than at any other great port in the world. Harbor dues, lighterage expenses, storage, all the incidentals of freight traffic, are very high. Rents are exorbitant. Much time is wasted, too.

This, of course, is not a new condition, but these expenses have had a tendency, as most other expenses have, to increase during the years of exceptional prosperity. In spite of them, the traffic has come in an ever-increasing flood. True, the railroads made it unprofitable to ship great volumes of grain through this gateway, but they did this voluntarily, to relieve the strain of a too-great traffic through New York.

Even with these drawbacks, it will be a very long time before New York ceases to be the great port of entry and exit for transatlantic trade, particularly in manufactured products. But the city and the state ought to see to it that the tax on business is made as light as possible. Port charges, elevator dues, freight differentials, lighterage charges, ought to be kept reasonable, and, above all, dock facilities on both rivers ought to be cheap and good. Less patronage and politics and a higher public spirit should come to the regulation of these things.

The public spirit of New York is not merely local in its effects or obligations; it must cover the whole country. For the wealth and the business activity of the whole country contribute to this city as to no other.

THE LONG VOYAGE OF THE FLEET

OUR big fleet of warships has gone on its long cruise around South America; and they present such a spectacle as was never seen before — practically the whole force of the second naval power in the world steaming from one ocean to another.

There are two clear-cut conceptions of the navy that shape men's opinions of this exploit. One is that it is an undesirable thing for us to have—*us* who are opposed to war, and who ought to bring every possible influence to bear to encourage universal peace; and that our having a navy contradicts our peaceful professions and, in fact, keeps our warlike qualities alive and is a menace to peace. That is a perfectly clear opinion, and many worthy men hold it.

The other clear-cut opinion is that an efficient navy is a guarantee of peace—is, indeed, necessary to maintain peace and to insure our safety, because we have not yet come into an era of universal arbitration and because, since there will surely be international wars in the future, we must be prepared lest one should be thrust on us. That also is a perfectly clear opinion, and it is held, we imagine, by a large majority of the American people.

But it is hard to find good standing-room between these two opinions. If we ought not to have a navy at all, our expenditure for warships and for keeping the officers and men in good training is wrong. But, if we must have ships and men, then we must have good ships and enough of them to do real fighting; and the men who man them must be kept in perfect training. It would be mere silly demoralization to have a few relatively worthless ships and to permit officers and crews to become soft. Since, therefore, our policy is to have a navy, the addition of a reasonable number of new ships, as the Secretary of the Navy asks, and the practice cruise of the fleet to the Pacific are not only defensible but praiseworthy, even necessary Every officer

and every man will be the better master of his craft for this experience; and such ships as succumb, if any do, ought to be put out of commission. There is no use in maintaining them as warships if they are unequal to this journey and the return cruise.

Other good effects of the voyage seem to have been forgotten by those who are displeased by such naval activity. At every South American port where the fleet calls, the people will welcome it and will be impressed by its coming as a friendly act. In a sense, Admiral Evans's visits to these ports will be a visit of our Government to these South-American Governments—a friendly visit; and there is no other equally convenient and impressive way for our Government to make a friendly visit to these Governments. The good effects of Secretary Root's visit will be strengthened by Admiral Evans.

These friendly influences, the gratification of our own people of the Pacific States, the experience that the officers and crews will have, and the practical test of the ships themselves, are among the good results looked for. As for a threat to Japan and the stirring up of hostile feelings there—these have vanished as other mares' nests do.

THE STING OF PREJUDICE AGAINST JAPANESE

JAPAN, in fact, has shown singular wisdom and forbearance in dealing with the emigration of laborers to the United States. When Baron Ishii, the commissioner to investigate the subject, discovered by his own observations and experiences here and in Canada that there was a settled and even violent objection to their coming, he went home and advised his countrymen to pursue an exceedingly conciliatory policy.

The Japanese Government has informed our Government that it is revising and restricting the system of passports, so as to lessen the number of immigrants to our country, and thus prevent possible restrictive legislation by Congress. Japan prefers that its laborers should go to Korea and Manchuria and develop territory under their own control.

Still, there is a sting in the protruding fact for the Japanese—the bald fact of a strong race prejudice. In war, in statesmanship, in education, in art, in science, they have won the admiration of the world; but they now discover that the American and the Englishman, in spite of their admiration of these achievements, draw a color-line against them as they draw it against other colored races. Their Government is cordially admitted into the family of nations and their men of culture and distinction are welcomed by white men; but the Japanese laborer may not freely share the opportunities that are open in the white man's land in America to other white men of whatever race or country. There is hidden somewhere in this distinction trouble for the future. But in the meantime Japan is prudent, patient, astute, and its statesmen show the wisdom of self-restraint. In the meantime, too, Japanese laborers are welcomed in Brazil, where the Government distributes land among them to induce them to settle; and Mexico also is hospitable to them.

The change of one Japanese ambassador for another had no especial significance touching the relations of the two Governments—so the world was assured both from Washington and from Tokio; but there is no doubt of a feeling of profound disappointment in the Japanese mind about the temper shown in America toward Japanese laborers.

CROSS-CURRENTS OF MIGRATION

THE large stream of steerage passengers back to Europe, which began in the fall, means that the labor market of the world is coming to be like the market of a neighborhood. When there is work at good wages here, Italians and Scandinavians and the rest come and do it; and, when work slackens, they go back home, where they can live more cheaply and happily, some to start life again in their old homes with the capital that they have saved, and others to come back here again when they are needed at high wages. You may find, especially in Italy, many good houses that have been built and many families established in comfort by money earned in America. Thus the old lands, where living is cheaper, take their toll of our prosperity; and in periods of depression large sums of wage-money, just when we need it most, go abroad. In this way a panic here, or even a lessening of work, contributes to the prosperity of many European communities. This is not economically fair; but the laws of economics work across boundary lines and oceans as wireless telegraphy does.

The loss of many of the best foreign laborers and of their money (for only the best return

to their homelands) is one of the penalties of our industrial system—the system of feverish activity, of large organization, of civic and social carelessness of the individual, and of the high cost of living On the other hand, it is fortunate that the going of these laborers relieves us of the danger of large masses of unemployed when a time of depression comes. It gives a better chance to the larger stream that is ever flowing hither. More than a million came during ten months last year, and perhaps half a million will go back this winter.

Large movements of population are among the most interesting things in human history. They are caused in our time by economic demand, by oppressive conditions at home, by the cheapness of travel, by well-traveled roads (that is, by sheer habit and momentum); and every large movement has its many-sided significance. For instance, the readiness of many Italians to return to their own country indicates the better chances in life there that the enormous Italian emigration of the last decade or two has brought. They are welcomed back wherever they are needed. The former economic and political pressure has been relaxed. Moreover, these men and women who go back carry many new ideas and some new habits that help to build up their communities; and thus our prosperity contributes to the betterment of life in many a peasant community in Europe.

But while Italy and to a less degree other European countries are "intelligence offices" and economic beneficiaries of our great industrial commonwealths, the efforts of the people of our Southern States to secure white immigrants succeed slowly. They offer most attractive opportunities, but they are not, as a rule, "quick" opportunities. They are opportunities rather for trained farmers and for skilled workers who have already become Americanized. Wages are yet lower than in the North and in the West; the presence of two races complicates social life; and, most powerful force of all, the machinery of immigration is not in good working order—the way is not yet made plain and easy from a European village to a Southern town or plantation. A large movement of men is hard to start and—hard to stop.

Thus, while large streams of laborers flow back and forth between Europe and our Northern and Middle Western States, the Southern States lack laborers; so, too, do the Pacific States, in spite of the numbers that go there; Canada seeks more European settlers than it gets, large as the immigration is; and Canada and our own Pacific and Southern States alike object to the coming of brown or yellow men to supply their deficiency. In a word, the white man who will work is at a premium alike in South Africa (from which many Englishmen are going back home) and in Georgia and Oregon and the great Canadian Northwest. The ease of movement back and forth across the Atlantic has not yet been worked out between other parts of the white man's world.

GERMANY AND ENGLAND

THE visit to England in the early winter of the German Emperor was watched with curious eyes from many European capitals. Berlin, in particular, was ready at any moment to find a justification for the almost openly expressed mistrust with which the visit was regarded. But the frankly appreciative reception which awaited him in the streets of London disarmed hostile critics for the moment, and in somewhat guarded language the newspapers of England, Germany, and France have expressed their complete satisfaction at this formal termination of a long estrangement. But German newspapers had not failed to notice that this *rapprochement* came only when King Edward had practically completed the ring fence of isolation which hems in the German Empire on all sides. France, Spain, Italy, Norway, and Russia have each in turn acquiesced in the friendly arrangement by which immediate questions involving friction with the British Empire and any possible misunderstanding at some future period have been set at rest by King Edward's indefatigable care and ready tact.

The German Emperor's visit completes the exchange of international courtesies and it is impossible to refrain from asking whether any material alteration has been made in the political outlook of Europe by this somewhat tardy reconciliation. It would be hasty to assume that because no agreement has been come to as the direct result of the visit, that therefore the meeting between the two rulers has been barren of fruit. In the first place, no acute conflicts of interest have as yet arisen between England and Germany. What-

ever soreness may have been felt at the alleged inaction of the British troops and police in South Africa along the German frontier has been long ago dispelled by the energetic action of a small British column in destroying Morenga's band. The hostility that existed, and probably must always exist, between the two nations is prompted by the ready spirit of ominous prophecy in which neither is deficient. The chief danger lay in the fact that so long as the two prime diplomatists were estranged it was impossible even to begin an attempt at reconciliation; and the most important result of the recent visit lies not in definite achievement, or even in a much improved mutual understanding. It lies simply in the fact that the overtures which had hitherto been impossible are now at any rate matters capable of sympathetic discussion.

ENGLAND AS AN ASYLUM

NOT the least curious fact that will have to be explained by the historian of the future is the practical immunity from attempted assassination which is enjoyed by sovereigns who visit King Edward. At least four European monarchs are far safer in the crowded streets of London, where adequate protection is almost impossible and the scum of three continents jostle Englishmen for places beside the openly advertised royal route, than in their own carefully policed capitals. It is customary to point to the traditionally benign attitude of the English people toward all political refugees and criminals as the sole and sufficient reason. But however greatly this may modify the hostility of the Anarchist centres in London, which are by this custom permitted to hatch their plots in peace, it fails to account for the absence of individual fanaticism. It is absurd to contend that a man who is willing to sacrifice his life for his purpose will refrain from a contemplated assassination because its achievement may hamper the subsequent intrigues of strangers. It is a curious problem, and its explanation may lie a good deal deeper than the superficial reason just quoted. It has been suggested that just as no American long resident in England can wholly resist the sedate influence which is exhaled by the steadfast permanence of the English race — its peculiarities, its standpoints, and its achievements alike — so, too, that strong abhorrence of killing any defenseless man, which is seated deep in London's six millions, has also its unconscious but controlling effect upon the would-be assassin. It is a nice point for the psychologist.

THE NEW CULTURE OF THE HUMAN RACE

ANY man will come to close quarters with perhaps the most fundamental subject of human progress if he read the literature of eugenics, "the science of being well-born," with which Professor Pearl's article in this magazine has to do.

To be born well—that is, of healthful and well-mated parents who were themselves so born of parents so born—is to make a constantly ascending scale of living, especially when by the help of the new knowledge of sanitation, hygiene, and digestion every generation may make a positive gain in preserving and transmitting its strongest qualities.

Dr. David Starr Jordan has pointed out as clearly as anybody the physical degeneracy that we run the risk of by our modern tenderness to the physically weak and defective—a very proper development of civilization, but a development of kindliness nevertheless that has a tendency to weaken the race. Another debilitating influence is the cult of "fads"—of forever seeking health and of developing a morbid self-consciousness of the body—the water-cures, the food-cures, the fast-cures, the exercise-cures, the pathetic half-truths at which we grasp and with which we morbidly struggle, instead of going on leading normal and temperate lives by rational care of the body and by honest work.

But, after all, by preaching and in spite of it, by fads and in spite of them, by the doctors' help and in spite of them (the profession yet working partly with its murderous old empiricism but more and more with its saving methods of prevention), we are very fast coming to have a right regard for the body and a right care of it, and coming to appreciate it as civilization has not before done since the old Greeks.

You can find facts to prove this ever-increasing physical improvement of the better class of American people. College students, for instance, are representative of this class; and the physical improvement that they show over their predecessors of half a century ago is a cheerful story. Measurements made at many colleges show that both young men and young women are heavier and taller than students of the same age were a generation

ago. Girls at Smith College (aged 17) are three pounds heavier, half-an-inch taller, and two-thirds of an inch larger in chest-measurement than girls of the same age were in 1883; and other schools for young women report a similar improvement. The Amherst College boy of twenty is four-fifths of an inch taller than the Amherst boy of twenty was in 1880, and more than three pounds heavier. The health of students is correspondingly better, not because they are larger, but for the same reasons that made them larger—being better-born, in a physical sense, living more in the open air, giving more time to sports, eating better food, having, in short, more knowledge of the body and a greater respect for it. To use an academic phrase, we are having a renaissance of body-culture, sensible as well as "faddish."

The "movement" (to use a name that the "faddists" dearly love to share with all "reformers") takes many shapes. Here, for instance, is a pamphlet put forth by the excellent Public Health Defense League, reporting the conviction of many quacks for practising all sorts of impositions and criminalities on the silly and the vicious and the unfortunate. Again, the general waking-up of the public conscience to the physical dangers of sexual vice and the distribution, especially by an organization in Chicago, of plain literature on the subject are having most excellent effects in spreading a high and clean regard for the body. Good morals are encouraged by physical teaching and training as they never were by mere moralizing since the world began.

In a land where everbody holds meetings for every conceivable purpose, few calls for gatherings are so significant as this:

"The Young Men's Christian Association in conjunction with the Public Health Defense League will give a series of mass meetings in New York on four Sundays [observe the day] in January, each meeting to be devoted to a public health subject. Distinguished speakers from all over the country will address these meetings and, during 1908, the League hopes to duplicate them in other cities."

A NEW ERA IN HEALTH

THE number of public-spirited organizations that are working, might and main, for the public health shows the earnestness of our awakening. In addition to the Public Health Defense League, which is national in its scope, and the long number of medical and semi-medical societies, the Association for the Advancement of Science has an influential Committee of One Hundred and other committees that bring all possible influences to bear, especially now, to induce Congress to give wider scope to the Government's activities for the prevention and the stamping out of disease. Among the specific facts that this Association has taken up for emphasis are these:

"That the Ohio River represents a thousand miles of typhoid fever; and the Hudson River, the whole distance from Albany to the sea, spreads infection among millions, from polluted water and ice.

"That of our 80,000,000 population, 8,000,000 must die of tuberculosis, most of whose lives might be saved by properly enforced health laws.

"That the milk-supplies of many cities lie across state boundaries and cannot be supervised by the authorities of the states in which the cities are, and infant mortality varies directly with the purity of the milk."

All these and more reasons are put forward to the National Government to broaden still more its activities for the public health. It is gratifying to recall the really rapid extension of governmental activity since the time when the General Government first made uniform quarantine regulations in 1866. Most of the Federal departments do valuable work—the Interior Department in studying the water supply; the Navy by medical research; the War Department by its sanitary engineers, especially in Cuba, Panama, and the Philippines; the Treasury Department by the Public Health Service, which prepares reports and statistics and maintains a laboratory; and the Agricultural Department through many of its bureaus, especially by the food acts. It is only a question of time and of pressure when there will be a Department of the Public Health, maintained by the General Government. In the meantime, too, many of the states are strengthening their laws and widening their activities in such a way that the prevention of disease within their boundaries will be carried forward.

We may enter a wholly new era of safety and immunity by efficient work in all these ways. But such changes never come without individual as well as coördinated effort. Laws are of value only in proportion to the active

public opinion that is behind them. One of the first duties of citizenship—individual duties—is to see to it that your own household and your own neighborhood live up to the light of hygienic knowledge. However competent and efficient and untiring your local health-officer may be, his permanent success in enforcing the laws is dependent upon the sentiment of the community.

A LITTLE SERMON ON HELPFULNESS

A NUMBER of readers of THE WORLD'S WORK have been pleased to express gratification at what has recently been said in its pages about the directions of the greatest social progress, such as the straightforward way of improving the human stock by better breeding, the method of direct constructive helpfulness such as trade-schools give, and such like obvious but forever important kinds of work.

Now there is one way in which every efficient and energetic person can help some less efficient person that is worth thought in this season of good resolutions. Take the cue from the method of the Federal Agricultural Department in its "demonstration" work on farms. A governmental "demonstrator" will go to a farmer and show him how, by simple methods of right farming, he may increase his yield by 25 per cent. or 50 per cent., or possibly double it. By tact he persuades the farmer to try the "experiment" on a small area. The net result, of course, is a complete revolution in method by the farmer, if he be a teachable man, as well as by all the better class of farmers in the neighborhood. But it requires tact and high social qualities to do that.

If you have tact and high social qualities of a corresponding kind, you may be of similar personal service to some member of your own craft or calling, with whom you are, or can come to be, in friendly and even intimate relations. If you are more efficient than he, you can teach him.

One lack in life, as it goes on day by day, is the lack of such direct, personal, friendly suggestion about our daily work. We go through some formal training or apprenticeship which we regard as a period when teaching is proper. But, as a rule, after we begin work or practice, nobody teaches us. True, every observing man learns valuable lessons from his associates or rivals; but the vast mass of workers learn little after the period of formal training, except by their own experience. It is seldom that a companion or rival offers helpful suggestions.

Now the point of this whole sermon is not only or mainly that you should be generous and tactful and social enough to help a worker at your own trade or business or profession—that is a good thing to do. But a better thing, perhaps, is to make sure that you are yourself sufficiently open-minded and hospitable to friendly help to get the good service that wiser and more skilful men about you will gladly give, if you have the proper friendly receptivity and a spirit of reciprocity. Most inefficient men are pig-headed men and instinctively resent suggestions about their own business. The first quality that will make you helpful to others this year, or any year, is your own receptivity of help and your frankly friendly attitude even to your competitors. If you have the temperament to welcome help yourself—if you are yourself teachable—you have the first quality that is required to help others.

THE SMALL INVESTOR AND THE PANIC

DURING the past three months or so much has been heard about the small investor. Early in November he became the mainstay of the tottering Wall Street market. The small investor buys with cash, and cash was the crying need of the Wall Street people in those days. Each day the financial press, which normally ignores anything less than hundred-share orders, made careful count of the "odd-lot" business in the market. An "odd-lot," it may be explained, means anything less than one hundred shares of stock.

A detailed inventory of the stocks bought in this way during the panic is, of course, quite impossible. The statements concerning

the nature and extent of the buying are therefore mere generalizations, based upon the experience of a few representative houses.

From such data it appears that the great bulk of this investment during the autumn was in such stocks as Pennsylvania, New York Central, Union Pacific, Northern Pacific, and, notably, United States Steel preferred. The people who had a few thousand dollars to invest sought out dividend-paying stocks, and stocks which in normal times had sold much higher than their panic prices. One estimate placed the buying in these five stocks alone at a total of more than $75,000,000.

Now, there is a lesson to be drawn from this circumstance — or rather there are two lessons: one for the small investor, and the other for the big banker. Both, it would seem, need the lesson. The phenomenon may be analyzed so as to be easily understood.

In normal times the small capitalist is not a buyer of stocks or bonds to any great extent. He has his money all involved in his business, or perhaps deposited in good savings banks or trust companies. He does not know the prices of stocks. What little investment he makes is in local bonds, in county or town issues, in little companies whose managers he knows. He looks with suspicion upon Wall Street and the securities in which Wall Street is interested.

Meantime, the big capitalists become the holders of stocks in great masses. In a five-year period of prosperity, the number of stockholders in the Pennsylvania, for instance, will shrink 10 to 20 per cent. That means "accumulation," that is, the gathering together of great single interests in the stock. The same thing goes on in every good stock. The capitalist owning such stocks frequently uses them in securing business loans in large amounts. The big banks loan on them as collateral. That is a normal condition.

Then a pinch comes, such a pinch as came, for instance, in October, in August, and in March of this last year. Hardly a year passes without such a pinch, though seldom does it assume the proportions of the panic in 1907. Immediately a new set of conditions arises. The big capitalist owning many stocks finds himself more and more pressed for ready money. In time, instead of trying to make more loans, he decides to sell some of his stocks. It starts slowly, this new condition, but gains headway as he discovers that all his friends are doing the same thing. Soon, if conditions continue unfavorable, the sellers outnumber the buyers. Then there is a sharp decline in the market prices. There is a rush to sell. A few English or German buyers may come in at this juncture; and the middle-class capitalists of this country, who have been waiting for a slight decline before buying stocks or bonds, may also come in. That may be, and usually is, enough to stop the decline by supplying the rich capitalists with the funds they need.

In our October smash this buying was soon swept aside. It did not provide nearly enough cash. Once it was broken through, nothing seemed able to stop the frantic rush to sell. Then came the bank exposures. That immediately tightened the supply of money. There seemed to be absolutely no one to buy, and there were thousands ready and anxious to sell. That was a stock-market panic.

Mr. Morgan and his committee, backed by the First National Bank, the City Bank, and half a dozen other great banks, checked the rush by extraordinary and, perhaps, barely legal methods. Then the "small investor" waked up.

All this time he had been sitting back, with his money and with no stocks. Slowly he came to realize that there were many safe stocks, selling at very low prices. He figured out that the 3½ per cent. or 4 per cent. paid him by his bank was not very much as compared with the return he could get by buying these high-class stocks. He saw his $1,000-a-year income increased to $1,500 by wise investment. More than that, he was quite sure that sometime or other he would see these stocks again selling at high prices. He figured the thing out, just as though he were about to buy a slice of his neighbor's farm or to absorb his rival's store or little factory. He did not contemplate a "flyer" in the market: he contemplated a real investment.

He came down with his money. In a good many cases he made the mistake of sending his money by mail to some widely advertised, clever, alluring brokerage house with no reputation except the one it gave itself by advertising in untrustworthy newspapers and equally untrustworthy periodicals. But in the large majority of cases he made no mistakes. He knew what he wanted: he knew what he would pay: he found out the right place to

go. In a very large proportion of cases he came himself, bringing his money on his person.

If he had been in the Street before, he came with a letter of introduction from his banker. Without it he found the best and most satisfactory houses in Wall Street closed to him. For, strange as it may seem, many houses demand such an introduction even from the man who carries specie or bills with him to pay for what he buys. In times of panic, such as the first week or so in November, checks on out-of-town banks were not accepted in payment unless certified. Dozens of men came into town to make purchases and went back without them, merely because they had failed to realize the necessities of the case.

Every small investor intending to buy stocks or bonds should see to it that these little preliminaries are observed. If he has a connection with a good banker, then he is all right. His checks need not be certified except in actual panic, when banks are under suspicion. But if he has to make a connection, he should first select his banker with the most minute care; then bring or send a good introduction; then clinch the argument of good standing by paying for his purchases in certified checks, or in cash Under such circumstances, he will be a welcome and honored customer in any good banking house.

Many came prepared. In the main, they bought promptly, then went away. The stocks went with them, transferred to their names in the large majority of cases. The old campaigners, men who had done the same thing in former panics or even in mere dull times, left the stocks in the names of their bankers and in their hands, merely taking receipts for them. It is a practice commended to only a few, and they such as have connection only with the best and most solid of bankers.

The following list shows the stocks bought by one buyer through a bond house which has a stock department. The prices are approximate. He told me the number of shares he bought, and that the total was "about $5,000."

SHARES	STOCK	PRICE	COST	DIVIDENDS
20	Pennsylvania	56	$1,120	$70
10	Nor. Pacific	103	1,030	70
10	Sou. Pacific, Pfd.	105	1,050	70
10	U. S. Steel, Pfd.	82	820	70
10	Gen. Electric	102	1,020	80
	Total . .		$5,040	$360

His investment will probably turn out well. Perhaps he may not get $80 from his General Electric, but that seems a remote contingency. He came from Schenectady, and he was determined to buy General Electric, claiming that he knew all about its business. In fact, it was by persuasion of his banker that he did not put half of his total investment into this one stock.

In general his investment yields him a little over 7 per cent. That is double the amount a 3½ per cent. savings bank would pay him. He is also conservative in figuring that his principal should increase by $1,500 with the return of good times. In all probability it will do so. It may take several years, but the conservative buyer does not figure on a six-months' turnover in stocks, nor in any other business except merchandise.

Now, these stocks are not all of a class into which the average investor should be advised to put his savings under ordinary circumstances. In the early months of 1907, THE WORLD'S WORK answered many questions relative to the purchase of such stocks. In nearly every case the investor was advised to regard them as "business men's investments," and not as "gilt-edge." Savings-bank depositors were advised to leave their cash in bank, or to buy only such bonds as are legal for savings banks themselves. It is only under extraordinary circumstances, such as those of the autumn of 1907, that such investors should be encouraged to purchase stocks of this class.

The lesson taught the banker may be put briefly, for he needs few words. It lies in the fact that once more, as always, the banking and brokerage facilities of the really conservative class failed utterly to rise to the occasion. Thousands of would-be buyers of stocks for cash were turned away from Wall Street houses of the first and second rank, merely because they came with "small amounts," $300, $400, or, in some few cases, even $1,000 to invest. The good times of the past decade have gone to the heads of the bankers. If the lesson of 1907 is properly taken to heart, it will be, hereafter, much easier for the "little fellow" to find a market in Wall Street where he can buy good bonds and stocks. The standing reproach that the doors of the sharper are always open in Wall Street, while the doors of the reputable banker are usually closed to the "small outsider," should pass into history along with the panic of 1907.

IN THE THUNDER MOUNTAIN DISTRICT, IDAHO.

A forest that has been neither cut nor burned

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THE STATESMANSHIP OF FORESTRY

THE GOVERNMENT'S METHOD OF PERPETUATING OUR FORESTS, AND WHAT IT MEANS TO THE FUTURE OF THE COUNTRY

BY

ARTHUR W. PAGE

THE national forests, which include about one hundred and sixty million acres, are set aside and scientifically managed, not only for preservation but primarily to be used. They are for the benefit of ourselves and our children, as well as for remote posterity, and they will improve with right use. This present purpose as well as future use should always be kept in mind.

The timber famine that threatens us is hastened by two destructive forces: forest fires and wasteful methods of lumbering. It is around these two kinds of activity that the Government's work centres.

GUARDING AGAINST FOREST FIRES

In almost any of the Western mountains the traveler sees the fire warnings of the Forest Service, and he is likely to meet some of the rangers. You will find them crossing

TWO 100-FOOT LOGS FOR SHIP'S MASTS

THE BASE LOGS OF A WASHINGTON CEDAR

SPECIMENS OF WESTERN TREES

the High Sierras in California, in the Crazy Mountains of Montana, among the Olympics in Washington, or following the old Apache trails along the mesas in Arizona. Wherever he is, the ranger keeps a keen lookout for the smoke of forest fires, and in the clear Western atmosphere even a little smoke column can be detected from afar. As soon as he discovers it the ranger takes his axe and shovel and goes as only a Western horse and rider can. Many small fires are stopped by this watchfulness, but there are others which take many men many hours to subdue. A fire in a chaparral so thick that a man can hardly force his way through it and parched by six months of drought makes hard and trying fighting. Then there are fires in the big timber among the dead trees of old windfalls, and overhead fires that spread faster than a man can run. If unchecked they will burn for weeks over thousands of acres of timber. And all this destruction may be caused by a carelessly left camp-fire or a match dropped from horseback. The sheep-men used to set the forest on fire purposely, for the year after a fire the burned acres yield fine forage. Happily this practice is discontinued. Sparks from locomotives now set more fires within the national forests than any other cause. Camping parties are the next worst offenders. Indians, stockmen, miners, and lumbermen, who travel continually in the forests, very seldom leave camp-fires to spread and do damage. They know too well the results. For a time almost every year the citizens of Portland, Ore., lose sight of some of the great mountains around the city on account of the smoke from the burning forests. There is little doubt that, since the white man settled in the West, more timber has been uselessly burned than has been cut and used. Outside the national forests every summer awful conflagrations still occur. The loss by fire inside the national forests last year was

A TYPICAL PARTIALLY BURNED FOREST

Almost all the timber of the West is coniferous; there is but little hardwood and there are few broad-leaved trees

FOREST LAND OF THE LAKE STATES AFTER CARELESS CUTTING—AND SUCCEEDING FIRES

Land near Ely, Minn., unfit for cultivation; it was once covered with pine forest. There are about 6,000,000 acres of barrens in the Lake States

DESTROYED BY REPEATED FIRES

This forest has never been cut. It has been thinned by successive burnings and fire is so likely in its present condition that there is little chance for the small growth which is starting

A TYPICAL FOREST IN THE NORTHWEST
With proper cutting and protection against fire, it may be used forever

$76,000. Less than one-thousandth of one per cent. of the 160,000,000 acres was burned over. Yet any one of the 12,000 fires reported, if unchecked, might have done more damage than they all did. This is a great tribute to the watchfulness of the fire-rangers.

The lumber companies are indirectly responsible for much of the destruction by fire. I had an opportunity to compare the operations of one company on two adjoining bodies of timber. One of these it owned and cut as it pleased. From the other it bought the tim-

A CULTIVATED FOREST IN AUSTRIA AFTER MANY YEARS OF SCIENTIFIC CUTTING

ber from the Government and cut it under the regulations of the Forest Service. The contrast was impressive. On its own tract the company cut all the merchantable timber. Where it was more convenient, the sawyers left stumps six or eight feet high, and many of the tops were left on the ground. Even with the most careful methods hardly 50 per cent. of a tree can be put on the market. Probably 70 per cent. of these trees was left to waste.

IN THE YELLOWSTONE NATIONAL PARK
The timber is not used nor scientifically cared for

Most of the young growth was killed either by falling trees or by the logs as they were dragged to the skidway. The wreckage of this young growth and the tops and branches of the larger trees lay scattered over the ground, ripe fuel for the next fire. The fire inevitably comes and it leaves a dead waste. The ground is bare. The lumber company got its logs to its mills with wonderful efficiency and cheapness; but when the operations are over the land is worthless, and the débris is a constant menace.

The other body of timber was part of a national forest. The terms of the contract with the Government specified just how it should be cut and in what condition the tract should be left when the operations were completed; for the land, of course, still belongs to the Government; only the timber was sold. And the Forest Service rangers watched the work. On this tract the stumps were all low, and much less of the tops was left on the ground. A greater proportion of the trees went to the sawmill and the waste was much less. Enough mature trees were left to supply seed for reforestation. The felled trees were

A FOREST AFTER BEING LOGGED UNDER FOREST SERVICE REGULATIONS
The young growth is uninjured and the brush is piled ready for burning

dragged to the skidway with care and the young growth was little damaged. The tops and branches were piled ready for the rangers to burn during the rainy season. When the loggers leave such a tract they leave a young and growing forest. In twenty years, when the other tract will still be a barren waste, the mill men will be cutting another crop from this one. Some of the lumbermen complain that the Forest Service's price for timber plus the added cost of lumbering under its regulations leaves them no profit. Nevertheless the Service has plenty of purchasers for its timber.

In the past the lumbering was even more wasteful than it is now. For instance, many years ago Alec McDonald cut redwood in Sonoma County, California, and floated the logs down the Russian River to his mill. The base logs of the redwood tree were too heavy to float, and he left them to rot where they fell. Some years later a more enterprising man put a small mill there and cut 35,000 feet a day for three months from the logs that McDonald had left, and the timber was of such high grade that he had to mix it with a poorer stuff to fill ordinary building contracts. Still later a third man found it profitable to get out the redwood stumps and to sell them to furniture manufacturers. The last chapter of this story is as characteristic as the others. McDonald died leaving a judgment against him for cutting timber which belonged to the United States Government.

DOUGLAS SPRUCE IN WASHINGTON

This is a mature forest which would be benefited by scientific cutting

Fire and reckless lumbering have now brought us to the incipient stages of a lumber famine. The Forest Service estimates that, unless some radical protective measures are taken, twenty years will see the United States a nation without forests. And some time before the forests disappear, cross-ties, mine

CATTLE IN THE LAKE TAHOE FOREST, CALIFORNIA
The receipts from grazing permits on all the national forests last year were $875,000

A GOAT RANGE IN THE ZARCILLO CAÑON, COLORADO
This part of the Las Animas National Forest is not suited for either cattle or sheep

timbers, and wood building materials will be prohibitive in cost. The great pine woods of the Lake States have passed their most productive period. Many of the mills are moving to the Pacific Coast in search of more timber, leaving behind them 6,000,000 acres of ruined and barren land that ought to be reproducing the forests which they cut off. The price of hardwood has risen from 25 to 65 per cent.; it is being cut in every locality where it is accessible in milling quantities, and yet the annual supply is 15 per cent. less than it was six years ago. The cut of oak has diminished more than 36 per cent. The Southern pine

SHEEP IN THE HOLY CROSS FOREST, COLORADO
Permits for 600,000 sheep and 100,000 cattle were granted by the Forest Service last year

forests have less than fifteen years' supply at the present rate of consumption. New England will not be able to supply the deficiency. People talk of steel and concrete as substitutes for wood in building. But there is now more wood used in the interiors of the buildings of a modern city than there was in the construction of the buildings of the cities of thirty years ago. The demand for wood increases every year. Yet, in spite of this, we export about $90,000,000 worth of forest products a year from our fast dwindling supply, to help other countries which are worse off than we are; and between our tariff on finished lumber products and the embargo on raw lumber which the Canadian

A FRAUDULENT HOMESTEAD

The claimant swore that she wanted the land for agriculture. The real object was to obtain timber. The rangers examine every homestead application in the national forests

Government passed in retaliation, we are cut off from a cheap supply of lumber from Canada.

If the approaching timber famine were inevitable, there would be little use in discussing it. But it is not inevitable. There is a brighter side to the picture. Besides the national forests, a dozen states are carrying on coöperative studies with the Forest Service, and many of the Eastern States have forest reserves of their own. Several of the great railroad systems and a number of other corporations are doing some planting. One mining company in Michigan is reforesting 14,000 acres. Private individuals also are beginning

CABIN OF SUPERVISOR THURSTON, OF THE YELLOWSTONE (SHOSHONE) FOREST

to plant. One man in Pennsylvania is planting 700 acres. The Forest Service gets from 3,000 to 4,000 queries a year about cultivating trees. Many lumbermen still prefer the wasteful method of quick profit, but there are many others — and among them some very large lumber owners — who "wish to make lumbering a perpetual industry." And this is well worth while, for it is the fourth biggest industry in the United States. The graduates of the several forestry schools are in demand by lumbermen as well as by the state and

UNITED STATES FOREST RANGERS

The rank and file of the service

AT THE ENTRANCE TO THE SALT LAKE FOREST
Fire warnings are posted all through the forests

A BRIDGE BUILT BY FOREST RANGERS
Over the North Fork of the San Joaquin River in California

National governments. The awakened interest of private owners and of different states is a most encouraging sign because, as large as they are, the national forests are not nearly large enough to supply even a part of the country with lumber.

Still, a good many people consider the approaching timber famine with the same feeling of regret and helplessness with which they listen to the story of the extinction of the buffalo. They feel that both are wild things which must inevitably perish before the advance of civilization. But the forests, unlike the buffalo, thrive in captivity. A cultivated forest is much more productive than a wild forest. A large proportion of the trees in a wild forest are not best suited to our use. They are of the wrong species — like weeds in a garden — are too old or crooked and have a variety of other blemishes; and, while doing us little good themselves, they prevent the growth of better timber. To destroy all the original growth and then plant a new forest on the devastated area seems illogical, but it is neither impracticable nor unprofitable, as the experience of Germany and experiments in this country show. It is much easier, however, and more profitable, gradually to turn the wild forests into cultivated ones.

The French began to do this in the fourteenth century. In 1669 Colbert issued a code of

A RANGER TRAIL
Which was used to check a fire in thick chaparral, San Gabriel National Forest, California

IN THE SIERRA NATIONAL FOREST, CALIFORNIA
The board on the tree above the rangers' horses marks the height of the greatest snow

forestry which is the basis of the modern French laws. France, as thickly settled as it is, has maintained its cultivated timber for five hundred years, while the West with its scattered population is about to make an end of its wild forests in seventy-five years. In contrast to the forestry conditions of France are those of southern Tunis. It was once a very fertile country, but the Arab conquest destroyed all the trees and now the ruins of its old capital, Suffetula, stand in an uninhabitable desert. "Not long after the conquest," says M. Jusserand, "an Arab chronicler recalled in his book the former times of prosperity and added: 'But in those days, one could walk from Tripoli to Tunis in the shade.' "

A FOREST THAT RETARDS THE MELTING OF THE SNOW
Without its aid the sudden melting would cause great floods in the rivers

Inside our national forests the woods are beginning to be scientifically used and improved, so that this generation and all succeeding generations shall get the greatest possible benefit from them; and we are getting this work done practically gratis; for the Forest Service is rapidly becoming self-supporting. Curiously enough, the receipts from the sale of timber, so far, are not the largest source of income. For the last fiscal year they amounted to $600,000, while the grazing fees reached a total of $875,000.

Before the national forests were managed, cattle and sheep ranged during the summer on the wooded mountain slopes and forest meadows and in the open parks. Unless they become too numerous, they do no harm to the forests, and it is a great advantage to the stockmen. Following the theory of the Forest Service, that the land shall be used in every way to help the permanent upbuilding of the West, a system of grazing permits was begun on January 1, 1906. Before that, and even afterward, until they began to understand the permit system, the cattle and sheep men looked upon the creation of the national forest as a menace to their business. But that feeling is now rapidly disappearing. At a ranger's cabin in one of the California forests I met a cattle owner who a few years ago had made a local reputation by his strenuous opposition to the Forest Service. He now frankly admits his defeat and his change of mind. He has permits for nearly as many stock as the rules of the Service allow one man to have, and he is getting on amicably with the local forest

PREPARING TO REFOREST THE DENUDED AREAS
Cultivating 1,500,000 seedlings on the Big Cottonwood Planting Station, Salt Lake National Forest

officers. How completely he has accepted the new situation can be judged from a question he asked me. He wanted to know whether I thought there was any hope of getting an increase in the ranger force in his vicinity. At another place a great sheep owner who had been an active opponent of Forester Pinchot remarked in his presence this year that, although he had been compelled "to put rubber boots on his sheep and range them in

NATIONAL REFORESTATION STOPPED BY FIRE

the marshes," he had nothing further to say against the Forest Service. Instead of being a hindrance as they had feared, the national forests are really great advantage to the cattle and sheep men. In the national forests the preservation of the ranges are assured and the stockmen's quarrels have ceased — except quarrels that grow out of old personal grievances.

A GROVE OF HARDY CATALPA PLANTED IN KANSAS

The Forest Service receives nearly four thousand letters a year asking for information about planting trees

The miners, who conduct the other great Western industry, look on the Forest Service with favor. There are some miners who complain of having to buy timber. There are others who complain much more intelligently because the Forest Service is not yet stringent enough in its regulations. They are thinking about mine timbers for the future, and well they may; for a timber famine would mean that many a mine now working low-grade ore would have to cease operations.

As Secretary Wilson once said, "Every tree is beautiful, every grove is pleasant, and every forest grand; the planting and care of trees is exhilarating and a pledge of faith in the future; but these æsthetic features, though elevating, are incidental; the people need wood." Yet, as badly as the people need wood, there is a more powerful if apparently incidental reason for preserving our forests. Without the forests our rivers, which are in a sense our greatest national asset, would be our greatest national curse. I reproduce a diagram of the flow of Queen Creek, Arizona. Most of the time that creek is dry. There is hardly enough water in it to water a horse. Yet after a rain it sometimes carries

THE DESTRUCTION OF THE SOUTHERN PACIFIC BRIDGE NEAR TEMPE, ARIZ.

A typical flood of a river with a bare watershed

as much as 10,000 cubic feet of water a second. It drains 143 square miles of treeless country. Another diagram shows the flow of Cedar River in Washington. Its drainage basin is also 143 square miles, but it is covered with forests. The rainfall is three times as heavy as in the Queen Creek basin, and the Cedar River during the year discharges far more water than Queen Creek. Yet its highest floods carry only about a third as much water as the Arizona torrent. All the energies of one are devoted to destruction. The comparatively even flow of the other makes it adaptable for irrigation or for the generation of power. At present it supplies the city of Seattle with water. One is a curse, the other a blessing; and the reason is that the valley of the curse is bare of trees, while the valley of the blessing is forested. The forest covering on the hillsides soaks up the rain water as a piece of blotting paper, and discharges it slowly into the streams. The shade of the forests also retards the melting of the snow. In the Yellowstone Park there used to be a shaded piece of road which had to be cleared of snow each summer to let the tourist coaches through. The trees were cut away and the snow disappears from three weeks to a month earlier than before. The total supply of water available for irrigation will cover only about 5 per cent. of the arid land, and the only way to retain that precious water is to preserve the forests as a natural reservoir to hold it. If, therefore, there were never another stick of wood cut from the national forests, their maintenance would be amply justified for irrigation and agriculture, for manufactures, and for the water supply of the rapidly growing cities of the West.

A STREAM IN A WELL-FORESTED SECTION

The forests hold back the water and check the floods, and also keep the river from washing its banks away

During five months beginning July 29, 1895, the Gila River dumped into the Colorado enough dirt to make a farm of 7,704 acres a foot deep. The Colorado itself in times of flood sometimes carries 1,000 tons of mud a minute. The rivers gather this soil because there are no trees on their watersheds. Rivers whose headwaters have been deforested are beginning to carry mud in this way, building up banks and bars, changing their courses, and ruining navigation. Part of the trouble on the lower Mississippi originated in the reckless lumbering operations on the headwaters of its tributaries.

All the national forests are in the West or in our outlying possessions, Alaska, the Philippines, and Porto Rico. The destruction of the forests by fire and axe and the consequent results of erosion in ruining the land and choking the streams with mud are more apparent in the arid West than they are in the East. Nature makes less resistance in that land of little rainfall than in the East. Thus it happens that the oldest part of the country is learning from the newest to protect its natural resources. The West is teaching the East and the Eastern perception is becoming quickened

by frequent calamities due to past neglect. The chamber of commerce of Pittsburg has made a large appropriation for tree planting in the hope of checking the increasing floods on the Ohio. Many of the Eastern States, particularly New England, have taken more or less efficient measures to protect their timber. New Hampshire is endeavoring to have a national forest created in the White Mountains. But the most important movement in the East is to have a national park in the Appalachians. In 1900 the Secretary of Agriculture conducted an investigation of the needs of this region, and he reported in favor, not of a national park to preserve a specimen of the Blue Ridge, but of a national forest from Alabama to Maryland to save the Appalachian Mountains. In that territory are the only great hardwood forests left in the United States. It is the region of the heaviest rainfall (except for a narrow strip on Puget Sound) and the source of more rivers than any other equal territory in the country. The lower slopes of the Blue Ridge and the Great Smokies are covered with giant oaks, hickories and chestnuts, hemlocks and beeches, and many other varieties of broad-leaved trees with spreading branches — a totally different forest from the evergreen forests of the West. Only near the summits of the mountains are balsam and spruce to be seen. Covering the soil is a spongy mass of humus, which soaks up the heavy rains and feeds them slowly to the streams.

But the lumberman is there destroying the old and the young trees alike and leaving the débris for the inevitable fire. The farmers in the little mountain valleys push their fields up the slopes for a year or two and then abandon them, for without their trees these hillsides soon wash into gullies and are unfit for cultivation. There are no grasses in the Appalachians that will prevent erosion, as there are in New England. There are no natural reservoirs to store the floods like the New England lakes. If the forests are destroyed the hillsides will wash into the rivers, carrying the silt with them, and descend in floods on the valley farms below. This is already beginning to happen. In two months in 1905 the floods on the Catawba River did $1,500,000 worth of damage. When they subsided some farmers found sand-banks ten feet deep on their fertile acres. A flood

A DEFORESTED HILLSIDE IN THE APPALACHIANS

The rain water runs off as fast as it falls, carrying much of the soil with it

on the Nolichucky River in May of the same year littered six acres of farm land so thick that the ground was invisible on account of the wreckage of farmhouses, furniture, lumber-yards, bridges, cattle, and some human beings that it had caught in its wild course. Ten years ago Professor Shaler, of Harvard University, estimated that 3,000 square miles of soil had been washed from the slopes of the Southern mountains on account of the destruction of the forests. And this process has been going on more rapidly since. The upper valleys of the rivers are becoming subject to violent freshets and the lower valleys to great overflows which have to be controlled by costly levees. "They shall cut down her forest," was one of the curses which Jeremiah prophesied against Egypt, and what sort of a curse that was we shall begin ourselves to realize if we continue to destroy the covering of our mountains.

But the destruction so far has been only enough to give an imaginative man a conception of what floods will come from those mountains if all their forests are ever cut under the present destructive system. Most of the Southern Appalachians are still covered with virgin forest. Slavery, the war, and reconstruction so hampered Southern industry that the forests have until late years fairly well escaped. If the Southern States now grasp the opportunity which their economic and political misfortunes saved for them, they may look upon the war as an economic benefit, for the forests are worth many times what the war cost. They have now a profitable monopoly of the cotton crop. With right methods of lumbering, they can have as profitable a monopoly of the hardwood supply, and it will be just as lasting a monopoly.

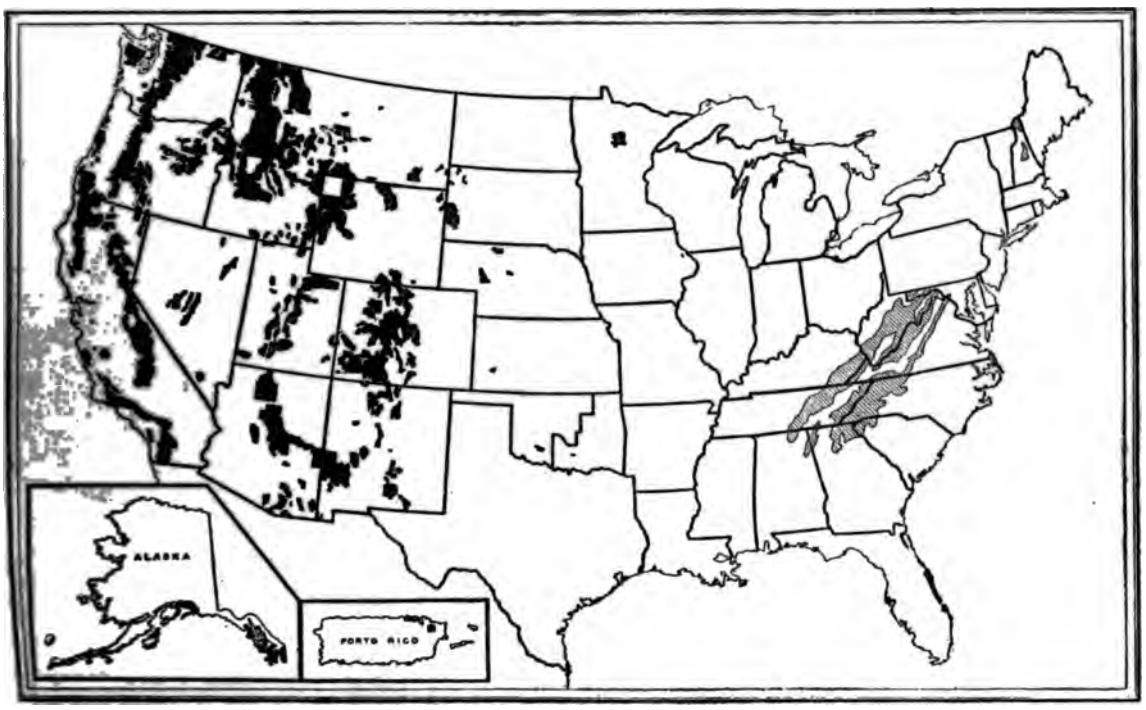
A VIEW FROM MT. TOXAWAY N. C.

Showing the rich growth of hardwood forests in the Appalachians. If properly used these forests will supply the United States with hardwood indefinitely and will protect the headwaters of the Southern streams. The lake in the foreground is artificial

Following Secretary Wilson's recommendation, a bill to create an Appalachian national

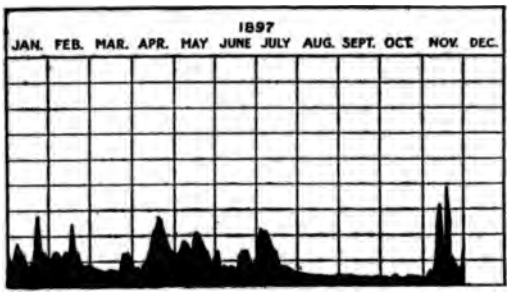
forest was presented at the last session of Congress — it had been presented several times before — and was passed in the Senate and reported on favorably in Committee in the House of Representatives. Then it was pigeonholed by the committee on Rules, of which the real power belongs to the Speaker. But the Democrats on the committee are divided. Mr. John Sharp Williams, for example, is not in favor of the bill. His objection is based on the theory of states' rights. There are many people who have a kind of vague feeling against the paternalism of the measure, which they feel is contrary to our customs. But men are restrained by law from acting so unreasonably on their own land that it damages their neighbor's property; and there seems little logic in allowing the lumbermen on the upper waters of the Cumberland, the Tennessee, and the Ohio to conduct their own business in such a manner that they will exterminate it and cause farms to be washed away and cities flooded, so that far down the Mississippi Mr. Williams's neighbors have to raise the levees higher and higher as the years go by. The states in which the proposed reserve lies do not feel that it interferes with their rights. They have all officially expressed their wish to have the Appalachian forest reserve created. When it is created, they will still have the right — if it is not a duty — to see that their forests outside the reserve are not wasted; and to withdraw from the lumbermen the special privilege of conducting their business to its extinction, and to the incalculable injury of the other citizens of the state.

The head of the Forestry Service is Mr. Gifford Pinchot, the foremost man in the country both in knowledge and in enthusiasm for the subject. He, of course, spends much time in the West, studying the forests themselves and the statesmanship, so to call it, of the whole economic situation into which we are drifting. He is, of course, not a man of political activities and he has never held an elective office. He is United States Forester for the very good reason that he knows more about forestry than any other man in the United States. His assistants are men who have had the same kind of experience. They are not desk men, for the rules of



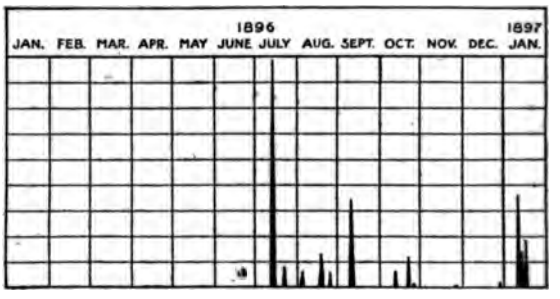
THE NATIONAL FORESTS OF THE UNITED STATES

The black portions indicate the present reserves; the shaded section near the Atlantic seaboard shows the proposed Appalachian and White Mountain reserves



FLOW OF A STREAM WITH A WOODED WATERSHED

The record of Cedar River, Washington, for eleven months in 1897. It drains 143 square miles of wooded area where there is a heavy rainfall. The forests keep the water from running off in heavy floods, and the bed is never dry. The record of the average Eastern river is about like this

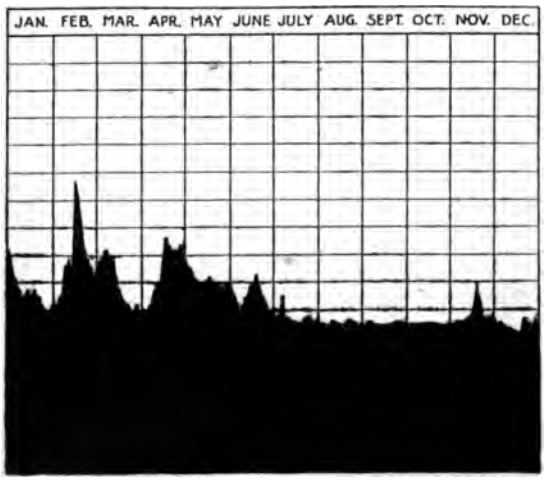


FLOW OF A STREAM WITH A BARE TERRITORY

The record of Queen Creek, Arizona, for 1896. It drains 143 square miles of treeless country where there is a light rainfall. Still the rains run unchecked into the creek and produce violent floods (as shown by the height to which the line in the centre rises), more than twice as high as the worst Cedar River floods

the Service require that all the administrative officers shall be in the field six months in every year. The men in Washington and the men in the field are in close touch with one another and they know one another personally as well as officially. The Forest Service is very little troubled with red tape. This is due partly to Mr. Pinchot and partly to Captain J. B. Adams, the Assistant Forester, who was one of the members of the Keep Commission that did so much to systematize the work of the different bureaus in Washington.

Besides the administrative men in Washington, there are experimenters, men who are finding out the best methods of planting forests and of preserving wood. They conduct strength tests for certain timbers and find new uses for others not now considered



THE FLOW OF THE DESCHUTES RIVER, OREGON

Showing its extreme regularity in a favorable year. Well-forested watersheds, supplemented by reservoirs, would increase the value of our rivers enormously and prevent the damage they now do

valuable; and they do many other things that are useful to the Forest Service itself and to the public. The Service also prepares planting plans, gives instructions for lumbering, and does everything else in its power for any one who wishes to practice forestry scientifically.

The organization in the field is extremely simple and effective. One supervisor has absolute command in each forest reserve, and he is directly responsible to the Forester for everything that happens in his province. The details are left to him. If he is a big enough man, this freedom is a great help to him; if he is not, he will not last long, for there is no one with whom he can divide his responsibility.

A few years ago, when the Forest Service was new, some of the invalids who had gone West for their health got the idea that the outdoor life of a ranger would be good for them. It probably would if they could have stood it, but any man who can do a ranger's work does not need to spend much time in nice considerations of what will be healthful for him. The "Use Book," which is a kind of Bible for the Service, gives the following qualifications for the position of ranger: The applicant must be:

"thoroughly sound and able-bodied, capable of enduring hardships and of performing severe labor under trying conditions. He must be able to take care of himself and his horses in regions remote from settlement and supplies. He must be able to build trails and cabins, ride, pack, and deal tactfully with all classes of people. He must know something of land surveying, estimating and scaling timber, logging, land laws, mining, and the live-stock business.

"On some forests the ranger must be a specialist in one or more of these lines of work. Thor-

ough familiarity with the region in which he seeks employment, including its geography and its forest and industrial conditions, is usually demanded although lack of this may be supplied by experience in similar regions. Invalids seeking light out-of-doors employment need not apply. Experience, not book education, is sought, although ability to make simple maps and write intelligent reports upon ordinary forest business is essential.

"For duty in Arizona and New Mexico the ranger must know enough Spanish to conduct Forest business with Mexicans."

The extraordinary thing is that most of the rangers have these accomplishments. As versatile as " 'Er Majesty's Jollies," they can fill any position, from diplomat to cook. And in all its fulness, the "Use Book" does not tell half the things a ranger must do. It does not mention fighting fire hour after hour without food or water, nor swimming the raging flood of a Western river, nor smiling into the barrel of a loaded gun in the hands of a crazy man, while a comrade slips around through the brush to disarm the lunatic; yet these things and many more fall to the ranger's lot. There are eleven of them who do nothing but hunt wolves. One not long ago followed for three days the trail of an old bear that had been killing stock. When finally caught it showed fight, and died with fourteen bullets in it, less than six feet from the ranger. It weighed 800 pounds. The rangers have that perfect control of horse and gun and the mastery of natural obstacles which were the pride of the "cow-puncher"; and the same keen sense of humor. And they are men of character. There is an *esprit de corps* among them and a pride in their work which makes them intolerant of anyone who brings discredit to the Service or to them. There is only one thing that threatens the efficiency of the ranger force. The pay is so low that in some localities it has been hard to get good men; and in a few places it has been hard to get a full force of any kind of men. Yet as a whole it is a most efficient corps, one which will soon be as famous, at least in this country, as the Northwest Mounted Police are in Canada. Forest rangers will figure in our novels and be a part of our national life. Some one will make a great reputation by writing a book of the stories of the Service. And as the public learns about them, it will begin better to realize the importance of their work.

MIGHT NOT EVERY AMERICAN HAVE A HOME?

A PLAN WHEREBY EVERY FARMER MIGHT ACQUIRE A FARM, AND EVERY CITY-DWELLER A HOME

BY

CHARLES LEPLEY HAYS

AN American ideal, not always expressed, is "a free home for every family." In a republic the family is the natural unit of society, and the homestead is its ruling capital. Government, institutions and industrial forces are but adjuncts of the home.

Yet the census reveals that the ownership of the American home is slipping away from the American family, as shown by these figures:

PROPORTION OF FARM OWNERS AND TENANTS.

	1880	1890	1900
Farm owners	74.5%	71.6%	64.7%
Farmers under tenancy	25.5	28.4	35.3

In twenty years one-tenth of all the American farmers were changed from owners to tenants. The tendency was nearly uniform in the Atlantic, Gulf, North Central, and Mountain States. The gravity of the movement grows more startling when we reflect that it has met and overcome the powerful opposite tendency created by the national free homestead policy.

Figures are not at hand to show the ratios of home owners in the smaller cities and villages, but there is reason to believe that the ratios are much higher and better than in the larger cities. The tendency in the large cities

is toward landlordism, density of population, and the overcrowding of the poor. In one city block in New York it is said that there are 10,000 persons, all tenants.

The conditions of home ownership in the great cities are very disquieting. The following figures, from the census of 1900, show the ratios of families (not persons) owning and renting homes.

PROPORTION OF CITY OWNERS AND TENANTS.

	OWNERS. Per Cent.	TENANTS. Per Cent.
Greater New York	13	87
Manhattan and the Bronx	6	94
Chicago	29	71
Philadelphia	23	77
Boston	18	82
St. Louis	20	80
Baltimore	26	74
Pittsburg	27	73
Buffalo	40	60
Cleveland	39	61
Cincinnati	19	81
New Orleans	21	79
San Francisco	22	78
Washington	25	75

DEFECTS IN OUR HOMESTEAD POLICY

The founders of our Republic believed that by abolishing the laws inherited from England and the other feudal nations of Europe, which entailed the land upon the eldest son in perpetuity, they were rendering impossible or remote the danger of land monopoly in the new country. The nation has progressively adopted a mildly favorable policy toward home ownership — the national free homestead acts for farmers, the newer irrigation policy, the exemption of homesteads from debts, and the laws restricting the power of the husband to alienate the homestead without the consent of the wife; but these policies have proved inadequate.

We have been accustomed to think that the free homestead policy has set the limit of Government encouragement to home ownership; but observe its limitations. It is confined to farmers, and offers no relief to the city and village dweller, nor to the industrial classes. The lands offered are on the borders of civilization, and these will soon be all taken. The millions of farm tenants of the settled farm regions can take advantage of the free homestead acts only in limited numbers. Nearly all must stay to till the landlord owned farms where they now are. The millions of city and village dwellers can secure these homesteads only by the impossible withdrawal of their workers from industrial pursuits. It still requires much of youth, energy, and hardihood, as well as some capital, to break home ties and undergo the pioneering necessary to carve a new home from the wilderness or the plain. Free homesteads are beyond the reach of the newly arrived immigrant.

The American farm tenant probably shares least in the general prosperity. His limited capital confines him to the most overworked and least profitable branches of agriculture. Uncertain crops and prices constantly endanger the whole of his little working capital. His annual rent is a perpetual debt. He has no party organization to help him. He is political driftwood. Scientific agricultural education has yet scarcely reached down its helping hand to him or to his children.

THE CRAMPED LIFE OF THE CITY

The tenement dweller of a great city finds that high ground values place home ownership beyond his means — except in the suburbs, too often an impossible distance from his daily toil. Modern business concentration has created the economic necessity for tenements piled flat on flat. In New York City alone, more than a million human beings live in slum conditions, swarming in half-lighted and ill-ventilated rooms opening upon meager courts, alleys, halls, and light-wells, and even in damp and reeking cellars. Mothers and children live in conditions where health and decency are impossible, and where disease, penury, and crime become the habit of life.

The city tenement at its best is bad, even in apartments where sanitation has done what it could. The artificial city street can never be the place for the rearing of the best type of children. Wholesome and vigorous childhood requires for its development contact with nature, ground room, space, freedom, quiet, and something of the fields, the sky, the waters, the forests, the animals and birds. Motherhood and childhood require freedom from the nerve-stimulating and nerve-racking city life. It is the farm or village youth, vitalized by contact with nature, who usually conquers in the stress of life.

The philanthropic souls who agitate for better laws for the slum tenements offer, not relief, but palliation. The problem is receiving attention, but not solution, because

the cities are crowding populations together at a more rapid rate than ever before.

A FARM FOR EVERY FARMER

The true solution lies in such a reversal of policies, governmental and economic, as shall result in the scattering of city populations over areas so broad as to afford homes where the mother and the growing child shall have room and environment such as the laws of nature inexorably require for normal life and development.

A homestead policy is required broad enough to embrace not only the unoccupied national border lands, but the larger privately owned and improved farm lands of settled regions, the congested homes of the city poor, the tenant homes of city and village, and newly developing suburbs and villages. A policy is required positive enough to make home ownership easy in every portion of the land.

A distinct enlargement of the national homestead policy, involving little that is new or untried in this or other countries, is needed. Adequate laws being first enacted, large privately owned tracts could be bought of those willing to sell; or, if forced purchases become necessary, a beginning might be made upon tracts held by aliens and syndicates. The owners might be paid, at their option, either in cash or in Government bonds. The tracts could then be subdivided into farms or acreage lots of suitable areas, each allotment being made to one family for homestead purposes. The purchaser should be allowed to take the land at the price at which the Government bought it. Deferred payments might be extended over as many years as will best meet the probable ability of the purchasing family, and all the terms should be made flexible enough to meet the contingencies of life, so far as possible. The purchase money could be secured by first lien on the property. If the lands should revert to the Government, the purchasers should be paid for improvements made by them. The rate of interest should cover the rate to be paid by the Government for the purchase fund and the annual expenses of administration of the department. The title should be in the husband and wife jointly.

A HOME FOR EVERY CITY DWELLER

Free homesteads could be provided for city and village dwellers by the purchase of suburban or agricultural tracts, and their subdivision and sale for homestead purposes. Residence districts can be created with water, sewers, drainage, parks, schools, and all the necessaries of a desirable residence district. Agricultural lands can be converted into very cheap homes by this method. Factories and other industries could be induced to follow the homes of the workers by a like offer of industrial sites at cost, and by such an effective Government control of transportation rates and service as shall guarantee to capital equal and stable rates and equal and adequate service. Capital and labor alike would profit under these conditions.

The congested districts of the cities present a complex problem. The first need is sanitary reconstruction. The Government may either assume a rigid oversight, or may, when necessary, become the landlord. The dispersion of the industries and the families which create these districts is the obvious remedy.

The Government bonds issued to form a loan fund to carry on such a broadened homestead policy would afford a basis for national banking to take the place of the disappearing war bonds. Repaid loans would pass again into the same fund to be again loaned, thus creating a perpetual loan fund. The experience of New Zealand in carrying out a policy identical with this indicates that the Government bonds would carry about 3½ per cent. interest.

The powers which fix railroad rates hold in their hands the distribution of industries, and through them of homes. This power is therefore an important governmental function. Railroads are public highways, and the power to fix rates by Government is fully established. The Government might, if found necessary, discriminate temporarily in fixing rates in favor of newly established suburbs or villages and of their industries, and in favor of new communities where their resources give promise of economic permanence, thus applying the protective principle to domestic affairs.

HOMES EXEMPT FROM TAXATION

Homes are non-producing property in the commercial sense. Children, mothers, the sick, the feeble, and the aged are in the commercial sense non-producing persons. The purpose of the homestead is the shelter of these persons. The family and the home are at the foundation of an enduring civilization. If the bearing and rearing of children

is the most important and sacred mission of woman, and if the protection and support of dependent ones in the home is the first and highest duty of man, and if these duties are vital to the nation, then the adequate support of homes should be held an equivalent which should absolve them from some of the other burdens of citizenship. The larger the number of children and other dependents, the more of capital must be invested in the home, and the greater must be the daily effort put forth. To tax the home provided by parents is to penalize parenthood. As well tax schoolhouses as the homes of children.

The per capita wealth of the nation is in excess of $1,000. Perhaps one-third of this sum is invested in homesteads. If every homestead were exempted from taxation to the extent of, say, $300 each for the husband and the wife, and a like further amount for each child or other dependent actually supported in the home, an important step would be taken toward the equalization of taxes. The excess in value above $300 per capita would still remain subject to taxation with other wealth. This would be in effect one kind of graduated taxation.

A city suburb or a village made sanitary and attractive for poor families under municipal or Government initiative may become as happy in the essentials of health, comfort, and culture as the streets where the rich live. Its schools, libraries, public halls, churches, and all its public utilities may contribute to the fullest extent to the public welfare. It may be protected from offensive nearness to factory dictricts, as are the streets of the rich, and from the contaminations of vice. The city should be built for its homes rather than for "business." The business interests should be the servants of the city's homes. The mothers and their children should be transferred to the quiet and health of the well-ordered suburb or village. Children and their mothers spend nearly all their daily life in the home, and even the breadwinner passes more than half his time there. The home is the world's most important institution. The American people need a new vision which will show us how to scatter our cities in the interests of humanity.

While the city has become congested with overcrowded humanity, the opposite extreme oppresses the farm. Isolation is the bane of American farm life. Vast regions are given up to agriculture with little diversity of occupations. The highly organized life of the towns finds little counterpart among farmers. The farm house is remote from its neighbors. The average farm community has no neighborhood centre and too often little business or social coöperation. The life of its people is too much a life apart, of toil and repression, from which the boys and girls look longingly to the life of the cities. Under proper conditions, the farm life may become an ideal life.

MEDICAL FEES ON A BUSINESS BASIS

A PHYSICIAN'S VIEW OF THE QUESTION OF OVERCHARGE, AND A SOLUTION

BY

DR. EDWARD A. AYERS

THERE must be something wrong in a situation that provokes constant criticism and complaint by a large class in any community. I have yet to meet a wealthy man who is placidly willing to be charged more than some poorer man for the same medical service.

We all hate to pay one man more than another would charge for the same thing, and there is a wide difference between our willingness to pay for a theatre ticket or a good dinner or a coat, and for a doctor's services. We do not want to be sick, or to spend money for something which we should have preferred to do without and for which we may not even get an appreciable benefit.

It is an almost universal fact that physicians and surgeons charge some people more than others (not necessarily for the same service but for the service to them), and there must be some good reason for the custom or it would not prevail. It is also true that this

provokes constant criticism, and there must be some good reason for this, or it would not prevail. Medical service is so classified that most of any one doctor's practice is confined to a class of people whose means are much the same, and his charges are much the same. Hence the doctor's fees will be largely uniform in his individual practice. But if multi-millionaire John Doe must pay Dr. Shrewd $5,000 for the removal of his suffering appendix, while demi-millionaire Richard Roe—who may live next door—can part with his to this same surgeon for $500, then it will be impossible for Doe to believe that his appendix was worth any more than Roe's.

THE ORIGIN OF MEDICAL FEES

The custom of charging by the Bradstreet scale is partly an inheritance from a status of making *no* charge, which prevailed in the earlier days of medical practice when the doctor simply accepted such "gift" as his patient saw fit to bestow, and partly to conditions now existing. Medical practice had a most humble origin, even after it emerged from the times when barbers were its surgeons and monks were its physicians. While we look with wonder upon the real learning and brilliant achievements of our ancient worthies—of the Arabians, of Hippocrates, Galen, Vesalius, and Paré—yet the vast majority of healers were applying as blind a method of dosing as the patent medicine frauds of to-day, though not so knowingly. The doctor had no social standing in feudal times, and was looked upon by the nobility simply as a tradesman. Nevertheless, the history of medicine shows that the doctor always held his profession in high respect, had a genuine love for it as a science, and looked upon its applied service to sick humanity in an uncommercial way, much more truly than he does to-day. In those gift-paid days he naturally received larger bonuses from wealthy "patrons," and nothing from the poor.

Not until 1849 could a professional fee be collected through the courts in England. At this time a law was enacted giving barristers legal right to collect by suit. So no individual, no organization, no profession is to-day responsible for the existing custom of gradation charges. The old custom of giving a lawyer a "retainer" was to secure a guarantee of his faithful service. Now it is to guarantee him his fee. Otherwise the change to the present consists in charging for professional services, and having authority in law to sue for payment.

But the system of charging—the gradation scale custom—still prevails, and the fundamental laws of economics will keep it alive.

COMPLEX MEDICAL CONDITIONS OF TO-DAY

So much for the origin of a financial system that is at variance with most non-professional business methods. Now let us name at once the elements entering into a complex and cross-purposed state of affairs, one which the medical profession generally recognizes as needing readjustment.

(1) The demands of charity must be taken into account. The absolutely poor must be cared for in sickness, though unable to pay. This is both a political and a humanitarian obligation falling upon Government, or doctor, or both. Of course, a large percentage of hospital and dispensary patients are able to pay something for treatment—some more, some less.

(2) The requirements of good medical education must also be considered. It is impossible to fit men for practice without direct use of sick people in medical teaching. It follows that the more complete the demonstrations with patients, the better the teaching and training. Hence, as successful management of a medical college depends upon business methods, an additional factor enters in besides pure charity—the need of patients in clinics. Fortunately this is all to the advantage of the poor. But it guarantees good treatment though it cultivates medical mendicancy.

(3) The question has also an important relation to professional expertness and reputation. A physician may acquire expertness and public reputation through private practice only, but these will come much more quickly and in greater degree through dispensary and hospital work. This is still more true when combined with teaching, which improves the teacher and enhances his medical reputation.

(4) The code of medical ethics is another factor. Modern advertising methods are not permitted to physicians by the formulated code of medical ethics, nor by the unwritten code. If such methods should be followed, chaos would quickly result. The longest purse and the biggest liar would smother the honest expert.

(5) The turning of charity patients to private offices is another phase of the problem. Most hospitals and dispensaries rule against their attending physicians taking sick applicants to their own offices, even though able and willing to pay something for treatment. This is due partly to recognition that such practice is not ethical and is hotly opposed by the profession in general, and partly to a desire to keep a large attendance of patients at the clinics. But another rule—no free treatment to those able to pay—forces either flat rejection of such applicants, leaving them to find a doctor where they may, or the giving of the office addresses of the attending physicians. Many "charity" applicants able to pay, and willing with a little urging, are thus shunted to private offices. (One of our largest dispensaries gives all such applicants a card containing the addresses of all its attending physicians and surgeons.) Many well-to-do people go to the institutions because they have no personal acquaintance with physicians, and because institutional treatment is a guarantee of good service or of skill. Investigation into the paying abilities of patients would call for a visit to each home—an enormous task. A charity organization offered to do some of this work for one dispensary for $50 a month; the dispensary had from 300 to 500 patients a day.

(6) There are too many doctors. For twenty-five years our medical mills have been turning out an enormous supply of physicians and surgeons. It has been said that only 20 per cent. of graduates earn a living through professional practice.

A UNIFORM STANDARD IS IMPOSSIBLE

Out of this tangle of forces and interests, a most unwholesome economic situation has developed. Just one-half of the population of New York City gets medical and surgical treatment without cost. The paying half can afford from fifty cents to ten dollars for what may best be called a unit of service. Many medical societies in communities smaller than New York establish a set rate of fees, either by the visit—office or home, day or night—or by mileage; and they thus secure the nearest existing approach to uniformity. But even here certain physicians will establish special and higher rates, both because their prestige and demand permit it, and to exclude a cheaper paying class. The larger the community, the greater is the variation in the financial ability of patients and in the cost of living for the physician. It would be impossible for New York physicians to observe a set rate of charges. The poor could not meet an average rate, and such rate would be lower than the rich could (and should) pay.

Every physician has his standard fee—fifty cents, one-dollar, two-dollars, three-dollars, up to twenty-dollars. This "standard" is his top price. If Dr. A.'s standard is ten dollars an hour, and a man belonging to the class expected to pay this charge cannot afford it, shall the doctor refuse him or give him a reduced rate? Shall he treat a man for nothing if he chooses to do so? That would be his right, and often his duty; and no injustice would be done to those who pay the standard ten-dollar fee. But, if one of the very rich presents himself, one of the class so scarce that no doctor could use him as a basis for fixing his "standard" charge, is it just to charge him above the standard? A department store sells some things at a loss, some at cost, some at the standard profit, and—if it hold a monopoly of an article much in demand—at whatever price it can get. Nearly all works of art are sold for as much as they will bring; each sale is a form of auction. In successive auction sales the identical painting may bring more or less each time. Crœsus, the man who is most heard from on this subject of non-uniformity of medical fees, endeavors to get all he can for his unlisted bonds, and will name as high a price as he thinks his customer will pay. In listed securities and loans the market-price has simply named, through a form of auction, a fixed price. Such customs are quite equitable.

But if Crœsus has Slumpus in a corner and charges him exorbitant rates for a loan, rates which would be usury in a pawnshop, he justifies it on the ground that there is not enough "call money" to meet the market crisis, and he can get his price from another customer. This is a special form of auction.

HOW MUCH OUGHT THE RICH TO PAY?

Now let us meet Crœsus at the office of his physician. By reason of his keen attention to business—which has perhaps enabled him to make a fortune in a day—he is found to be suffering from an acute inflammation due to gall-stones, which must be removed promptly.

He is now in the same relation to the medical "business" that Slumpus was to the financial business. He is badly scared, and begs the surgeon to do all that he can for him. After recovery he receives a bill for $5,000—say $10,000, if you will. He is staggered, even though he did make $50,000 the day before the attack—say $100,000, if you will; it matters not. He happens to know that this same surgeon had done the same operation for his friend Moderatus for $1,000. "This is not business-like; it is an outrage!" he exclaims.

Both Crœsus and the surgeon were at fault in this case. Crœsus should have inquired the price; and the surgeon, in the absence of such question, should not have had a sum in mind which would create dissatisfaction, and should have mentioned it himself. Then, if Crœsus wished, he could have gone elsewhere. But perhaps there was not time for Crœsus to go elsewhere. And perhaps the surgeon could not fairly name a set sum, as complications might set in and call for more service. But he could have named a scale range that would be sufficiently equitable to satisfy any reasonable man.

Now, should the surgeon take advantage of Crœsus's "business" oversight, his suffering, and his anxiety, and charge more than he would have agreed upon, if asked? Certainly not. But, if the surgeon had no thought of his charge being too high or of causing dissatisfaction to his patient, then the fault lies wholly with the patient.

Two thoughts now occur: The difficulty of placing a valuation on professional service; and the merits of present rates. Both medical and legal service not infrequently result in no benefit, but such service must be paid for. Generally speaking, the size of the fee does not depend upon the results. In many cases no cure is expected. If the lack of benefit be due to lack of skill or attention, an allowance should be made; but no reputable physician will guarantee a definite result, though not hesitating to express an opinion as to probability. Courts know no better basis for determining professional services than by numbers of visits, or hours, with some consideration given to results obtained, and to the opinions of "experts" or other physicians who state what are the average rates for such and such classes of service. It will always be impossible to make a definite rule for professional charges. And that is one reason why a written or unwritten code of ethics must be sustained. The gentleman must be an entity in any profession.

ARE DOCTORS FAIRLY PAID?

Yes and no. The most successful doctors make a reasonable fortune, though the scale is far below that of many other callings, brain for brain. But the percentage of those having anything to "will" away is very small. The great majority of the "successful" ones make only a comfortable living, but the actual majority of doctors make from $500 to $1,200 a year. Possibly this will average out about the same as in business callings, with the difference that doctors must spend years of time and expense in apprenticeship. But no increase in charges has followed greater cost of living.

Let us now see if we can draw a picture of medical practice in the Borough of Manhattan, if placed on an absolute business basis.

First, we will suppose that the doctors imitate the trades-unions and organize into one cast-iron body that shall fix a gradation scale of charges that must neither be cut nor "hoisted." This scale will depend upon classes and locations. If a Fifth Avenue millionaire chooses to go to Hester Street and get low rates, there will be no objections. The laws of "trade" must regulate.

Second, let it be decreed that no doctor shall be permitted to give any professional service for nothing. It is fundamentally the duty of the city government—certainly not of the doctors — to care for the sick. The courts have so decided.

Third, that any doctor doing work for the city must be paid according to the established scale, or by a special hospital and dispensary scale; no free service to hospitals and dispensaries. Now see how this plan would work.

NEW YORK FEES ON A BUSINESS BASIS

During the year 1904 about $4,300,000 was spent in the Borough of Manhattan for hospital maintenance, and 150,000 patients were cared for free. In 1905, 452,422 people were treated free at the dispensaries, and 176,064 for pay. Over 2,000,000 visits were made by these charity patients to the dispensaries. With the medical cast-iron union in good working order, what should be the charge against the city (and private managers) for these hospital and dispensary services? Let us average the stay of the 150,000 free patients

in the hospitals at seven days each, and allow the lowest practice rate of fee for each case, medical or surgical—say, $25. This would make about $3,750,000, or the equivalent of $750 to each of the city's 5,000 doctors. For services to the 2,000,000 "treatments" in the dispensaries (the number of visits is probably larger than this), at one dollar per visit (a very low rate for a union to allow), there would be $400 more for each doctor. There would then be a total of $1,150 to distribute to each practitioner.

From a business point of view, the physicians of New York City are giving away $5,750,000 worth of their professional goods every year. The larger part of New York's medical charity is supported by private contribution—not by the city government; and yet but a very small percentage of our well-to-do contribute a cent—not one in a thousand.

The immediate effects of this applied business method would be to stop mendicancy, and to reduce the amount of dispensary work fully 40 per cent. So there will only be an added cost of 10 per cent. to the medical charities work. But here arises the problem of clinical education. Medical students and doctors must receive direct training in treating disease. The state must enforce this, and not a doctor would oppose it. But our physicians' union will have a difficult problem and a stormy meeting.

To ensure a thoroughly business method, a special committee advises as follows:

(1) That all hospitals and dispensaries be districted, and that all applicants for treatment shall go only to an institution in the district in which they reside. (Certain exceptions to be allowed in hospital cases.) This rule will exclude the host of out-of-town people who now flock to our charities.

(2) That all hospital and dispensary work shall be available for medical teaching. But teaching must be done by men of special aptitude, and it is manifestly impossible to place this clinical work in the care of all our doctors. A great sacrifice must be made by the profession in general, but it stands ready to make it. The health of our community is directly dependent upon the excellence of our medical teaching.

Medical colleges are supported partly by endowment and mainly by tuition fees of students. In the undergraduate schools, the teachers are paid salaries for teaching ranging up to $5,000 a year. The teachers in the post-graduate schools get no salaries. Whatever these teachers receive they earn, and whatever the profession loses by consequent withholding of a socialistic distribution of practice, it must be withheld for the sake of greater interests and rights. So our physicians' union agrees that—

(3) No physician shall hold any position in any hospital or dispensary, which does not permit teaching use of its clientéle, unless such institutions shall pay to their medical staffs salaries commensurate with the work done. (This will put an immediate check upon treatment of those able to pay a "home" doctor.)

(4) All institutions permitting clinical teaching shall pay their attending staff as in Clause 3 for departments *not* so used; and shall be absolved from such payment where teaching is employed and revenue is otherwise received by the teacher.

(5) All incorporated medical schools shall pay a tax proportionate to the "cases" demonstrated (the amount to be hereafter rated, but based on annual reports to the state authorities) to a beneficiary fund, which shall be devoted to the assistance of deserving physicians and their families. (This will likewise put a check upon the cultivation of large clinics at the expense of private practice; it will not prove burdensome to teachers whose incomes are partly derived at the expense of private practitioners; and it will partly lighten the sacrifice of practitioners to the cause of medical education.)

READJUSTMENT OF MEDICAL FEES

A second committee of our medical union now reports as follows:

(1) That, medical colleges shall raise their standards and be obliged to give reasonable hospital and dispensary training to every student permitted to graduate.

(2) In view of the increased cost of living —from 25 to 40 per cent.—all fee rates shall be raised in similar proportion.

After all these readjustments have been put into effect, let us suppose that Crœsus, having effected another *coup* in the market, suffers a second accumulation of gall-stones and hurries to Dr. Shrewd; but this time he remembers to be business-like, and first inquires the cost.

"It will cost you 25 per cent. more this time," is the reply.

THE PRICE OF PAPER—A TAX ON KNOWLEDGE

A TARIFF THAT HAS BRED A TRUST AND HASTENS THE DESTRUCTION OF OUR FORESTS

(A statement by MR. DON C. SEITZ, *of the American Newspaper Publishers' Paper Committee)*

DOUBLE the price of your newspapers to the public, increase your advertising rates, cut down the size of your papers, and give us the benefit," is in effect the message conveyed to the newspaper publishers of America by the combined manufacturers of news print paper, who turn out approximately 3,000 tons a day of the raw material required in producing daily and weekly publications in the United States. Like warning has gone to the periodical publishers and to the job printers from the makers of the better grades of paper.

This message reaches the seventh greatest manufacturing interest in the United States. From 1900 to 1905, which is the last period covered by census reports, the printing and publishing business became the third in growth and the first in the number of separate establishments maintained. The capital of the newspapers and periodicals alone was $239,000,000, while in annual wages they paid out $106,000,000 and spent $58,000,000 per year for white paper. The printing and publishing interests represent an annual product of half a billion dollars, of which the newspapers and periodicals contribute more than three-fifths of the output; and of this latter quantity, the newspapers afford three-fourths.

It is an extraordinary situation in which the publishers find themselves. They have no protection from the tariff. They employ the highest priced labor paid by any large trade. It is the most intelligent and it is the most highly organized. In no industry is the standard of wages maintained so definitely as by the men employed in printing establishments. The publisher sells his wares at a fixed price. The man who issues a one-cent newspaper must issue a one-cent newspaper and nothing else; he cannot raise the price from day to day to meet changing conditions, as the merchant or manufacturer can. He can sell his advertising only at a fixed rate because, in a way, he is a common carrier; were he to vary his rates he would soon be in trouble with his customers. In the article which is his only raw material of importance he is put to sore straits, and to-day the American Newspaper Publishers' Association and the Periodical Publishers' Association are looking about for some method to break the bands which bind them.

By reason of the fact that spruce timber is the only really economical paper-making material, and water-power the only power that will cheaply grind the wood, the paper-maker is in a sense a natural monopolist. If this were not enough, he is highly protected by the tariff, news paper alone being burdened with a tax of $6 per ton. This tax did not always exist. It was created as a preliminary to the successful formation of the International Paper Company, better known as the Paper Trust.

When, some thirty years ago, Mr. Albrecht Pagenstecher brought over to America the German patents for making wood pulp, he revolutionized paper-making and made the modern newspaper possible. At that time paper was made of rags or straw, both costly materials. Spruce lumber was not esteemed except for dimension stuff, and was sold at trifling prices. Water-powers were unused. So he established a new industry. He made valuable the spruce forests and made precious the water-powers. Throughout the New England States and in Wisconsin and Minnesota, where there were large forests of spruce and many excellent water-powers, paper mills sprung up. A good and cheaper article was produced in liberal quantities and placed on the market. The despised spruce forests, often bought at from 80 cents to $1.50 per acre, became an asset of value. Spruce was simply

and cheaply converted into a saleable article in the form of paper.

HOW THE TARIFF BRED A TRUST

By 1896 paper had reached the low price of $1.65 per hundred pounds, and in that year at least one sale was made by Mr. Hugh J. Chisholm, long president of the International Paper Company, at $1.60 per hundred pounds in New York City. By this time, too, some of the forests had been diminished. Timber near the river banks had been cut away, and the rivers themselves suffered in floating and power capacity from the reckless denudation of the trees. Scientific methods were ignored. Lands that should have produced forever were turned into scrubs of birch and oak, and many mills became less profitable. The groups in Massachusetts and Vermont, controlled by Mr. William A. Russell, were particularly affected, and he bestirred himself to organize a combination. His first efforts did not succeed, because the tariff was not high enough to afford a wall of safety around the valuation that many mill owners placed upon their property, and he went to Washington and secured the $6 protection now in force—doubling the rate. After that the construction of the trust was easy. Mills representing a cost of $10,000 and $12,000 a ton production were taken into the combination on a valuation of $20,000 a ton, which has since risen, through bond issues, note borrowings and surplus, to about $40,000 a ton. In this way practically all the news paper concerns in the East were consolidated as a New York state corporation—and the upward movement in prices began. Incidentally, fate has not been kind to trusts dealing in paper. The first one to form was the wall-paper trust. This, after a period of disaster brought about by bad management, reckless over-capitalization, and oppression of the retail trade, went to pieces and resolved itself into its original parts, as nearly as they could be discovered. The box-board trust followed, and has been tottering on the edge of the grave for several years. It is now being held together by an ingenious device called Park's Pool, which seems to violate the law. The writing-paper trust's stock is quoted at about two cents on the dollar and its bonds at but little more.

The promoters of most of these schemes at once exchanged rural homes for palaces on Riverside Drive or Fifth Avenue, and began playing with their marked cards in Wall Street. There have been but few survivals of the once brilliant throng. Their debts, however, remain behind them to burden honest industry for all the years to come. From time to time the little competition that existed was smothered by the simple device of buying the excess supply of the independent mills, and so maintaining rates. But the periods of oppression were spasmodic until 1903, when the consolidation of the Wisconsin and Minnesota mills, under the title of The General Paper Company, led to a definite division between the East and the West. The Western papers were the first to feel the change. Arbitrary and non-competitive methods came into vogue, until finally in exasperation the Publishers' Association—through a special committee consisting of Mr. John Norris of the New York *Times*, Mr. Conde Hamlin of the St. Paul *Pioneer Press*, and the writer—took the matter before Attorney-General Knox, who proceeded under the Sherman Act. Through the assistance of Mr. Frank B. Kellogg of St. Paul and Mr. James M. Beck of New York, he secured the first Government destruction of a trust. The terms of the decision were drastic to the last degree and the defendants were enjoined and prohibited from—

> "agreeing or contracting together or with one another, expressly or impliedly, directly or indirectly, with respect to the manufacture, price, sale, shipment and disposition of papers manufactured, sold and distributed by the defendants or by contracting and agreeing together, expressly or impliedly, directly or indirectly, as to the prices at which the paper or any part or grade thereof shall be sold, as to the persons or corporations to whom it shall be sold, as to the territory in which any of such paper shall be shipped, sold or otherwise disposed of, or as to the amount and quantity of such paper or any grade thereof which shall be manufactured, sold or distributed by the defendants, or by agreeing or contracting together or with one another with a view to the imposition of any burden or condition upon the manufacture, sale or disposition of such paper manufactured by the defendants."

Up to the present time, therefore, in spite of several efforts to fuse, the Western mills have remained separate. An attempt in the last three months by Mr. John G. Hanrahan, a New York promoter, has failed, in the certain light of his going to jail if the above decree were violated. The impudence of the effort to

re-form the combination is considerable. The period of easy prices that followed this decree lasted until well into 1907, when conditions in the East, owing to a drought and to increased consumption, brought the production and the market lip to lip. By the first of April, 1907, there was no spare paper. Where there should have been 60,000 to 80,000 tons margin, there were not 20,000 tons; and the manufacturers saw in this the appointed hour for a new combination that should be a gentleman's agreement, and if possible not amenable under the law.

It did not take form, however, until the St. Regis mill, the new St. Croix mill and a number of northern New York mills, representing a daily output of 520 tons, came under a single selling agency. This left not more than 500 tons a day loose on the market outside of the Great Northern Paper Company, which was oversold and not a necessary factor in the scheme, although abiding by it. The result was that on the second Tuesday of September the controlling factors in the Eastern mills met in New York and established a scale of prices to prevail until January 1, 1908. Under this scale no contract was to be made for less than $2.50 per hundred pounds, and no ordinary lot was to be sold for less than $2.60 per hundred pounds. Hitherto the average price of news paper had been from 1.9 to 2 cents per pound over a period of several years, and this movement arbitrarily and without warrant added from $10 to $12 per ton to the burden of newspapers not protected by long-time contracts. Three newspapers in New York use at least 2,800 tons of paper per week alone. Many newspapers using four or five or six thousand tons of paper a year were at the end of their contracts; prices were hoisted $40,000 and $50,000 and $60,000 a year, in many cases the sum equaling their net profits. When they sought for bids among the several selling agencies, their letters remained unanswered, and they were turned back to their original source of supply, helpless and without resource. It is not unnatural, therefore, that a cry of anger should come up from the newspaper offices and that the newspapers should feel that the tariff is indeed "the mother of trusts." Here is the whole material of a vast industry held in the hands of less than twenty men. They have so accurately measured the ability of Norway and Sweden and Canada to compete with them that they have raised their price to the exact level of the tariff fence. They are selling paper to-day in London at two cents a pound delivered, and in Australia at 2.4; and no publisher in New York city since the second Tuesday in September has been able to buy news paper for less than $2.50 per hundred pounds. No wonder President Chisholm, in the tenth annual report of the International Paper Company, made October 23d, remarks:

"The demand for paper is now fully equal to the production. Prices are materially higher than during the larger portion of the past year, and the indications for the present fiscal year are more promising."

He also announced that for the first time since his company has been in existence, ten years, it has installed some additional machinery, which will add from 70 to 80 tons per day to the output of his concern. Let us look a little at this report. The balance-sheet shows a capital account of $69,570,813, against which enormous sum this concern did a gross business for the year ending June 30, 1907, of $21,841,486, or much less than one-third of its liabilities; and in spite of this, it shows a surplus on June 30th of $6,865,500. In all the special pleading that has preceded this arbitrary rise in price, we have been told that labor cost has increased one-third, that the price of coal has increased, that wood has increased, that everything has increased, and it is easy to grant that this may be true. But the International's cost of operation during the year increased but $365,596 over the year before, although the three-tour plan of employment, which divided the men into three eight-hour shifts instead of two twelve-hour shifts, was in effect; and the price of coal and wood had already been advanced. To offset this increase, it is therefore proposed by the International Paper Company to add an average of $10 per ton to its price for the manufactured article, equivalent to $16,000 a day on its output, or in round figures $5,000,000 a year additional on a gross business under $22,000,000, or less than one-third its capital account.

What has been done by the combined manufacturers of news print has been outdone by the manufacturers of book and magazine paper. The West Virginia Pulp and Paper Company, the largest concern of the kind in the world, has succeeded in making an arrangement with the other mills whereby the price of its product

has been lifted by $20 to $30 per ton, according to grade, upon an initial basis of from $60 to $90 per ton primary cost. Without the tariff protection none of these things would long be possible.

The lessening of the timber supply, the weakening of the water-powers, and the over-financing of the corporations combine to menace the publishing business as no other business is menaced to-day. The paper magnates answer the cry for the reduction of the tariff by saying that there are not to-day 100 tons of unsold paper in Canada. This is true. But there are in Canada millions of acres of timber lands from which the American paper companies to-day draw 70 per cent. of their raw material free of duty.

It is the purpose of Canada within less than a year to place a prohibitive duty upon the export of timber, and American manufacturers are already crying to the newspapers and periodicals to save them from this calamity. They will get no help. They have pulled the house down upon their own heads. With a rare unwisdom, they have capitalized their business until it can be capitalized no more. They have erected a tariff wall that has shut them out of Canada, and they are obstinately trying to maintain themselves on the impossible basis of a stationary production against an increasing demand. They are asking the publishers to curtail, to keep down, to diminish, when if they were wisely managed they would be in a position to urge the publishers to increase, to progress. If they had been properly capitalized they would to-day be selling their decreasing water-powers for electrical development, at an increased price, and would be asking to do away with the tariff in order that they might invest the money thus acquired in Canadian water-powers adjacent to fresh forests, while the American woodlands are given the next forty years to reproduce themselves.

The publishers are endeavoring to convince the manufacturers that it is not yet too late to do this. The action of the Canadian Parliament will perhaps aid in opening their eyes. If the timber land owned in Canada by American mills cannot be tapped, manufacturers will go to Canada and invest, and the tariff will come down. It is only a question who shall get there first.

MARKSMANSHIP IN THE NAVY

A NEW SYSTEM OF INSTRUCTION WHEREBY EVERY WARSHIP BECOMES A GUNNERY SCHOOL AND EVERY GUN-CREW A COMPETING TEAM

BY

FRANCIS JOHN DYER

THE days when 100-gun men-of-war engaged at pistol range and delivered broadside after broadside into each other's hulls until one or both were sunk are no more. Now navies expect to do their fighting at a distance of from three to five miles; and at such distances only the 8-inch rifles and bigger guns are effective. The 5-inch, 6-inch, 7-inch, and guns of smaller calibre are good only at ranges under three miles, and their usefulness will probably be effective chiefly against such marauders of the sea as torpedo-boats and destroyers.

The glamour of the seas did not depart when the wooden sailing ship yielded its supremacy to steel hulls and steam engines. A sailor's life still has fascination about it. When the big ships of the Atlantic fleet went forth to their target practice last spring, four eminent men watched the work — the Secretary of the Navy; Senator Hale of Maine, chairman of the Naval Affairs Committee; Senator Flint of California; and Senator Carter of Montana. They went down to the practice grounds at Guantanamo on the *Dolphin*, and after watching the work of the gunners from a distance, they accepted an invitation to witness the team-work of a crew inside a 12-inch gun turret on board a battleship. The gunners loaded, aimed, fired, and sent the shells tearing through the canvas target away off on the bay's surface, in the almost incredible time of twenty-three seconds between shots. It is but a few years since five minutes was a good

record for similar work, and then it was doubtful where the shot would strike. So greatly has the efficiency of the gunners increased that doubt has given way to probability, almost to certainty.

The feats of naval gunners seem remarkable when one looks at a ship from three to five miles distant and considers how difficult it would be to hit it even with a rifle, had he one powerful enough to carry that far. To hit anything with a cannon, even at short range, has always seemed largely the work of chance, but the Navy has reduced gunnery to such a science that it wastes scarcely any powder at all in poor shooting. Even at a distance of five miles an enemy's ship would be an easy mark.

GOOD SHOOTING NOT GOOD ENOUGH

Criticism of our victorious fleet would not have been tolerated during the Spanish War, yet an analysis of the fight off Santiago de Cuba showed that at the easy range of about a mile and a half, and with the ample targets presented by the Spanish war vessels, the American guns made only between two and four hits out of every 100 shots fired. Of course, that was enough to do the work — and it was much better than the shooting of the enemy — but certain critical officers who had improved the opportunity to see what was being done abroad realized that our shooting was bad, very bad; in fact, they considered it inexcusably bad. They gave the matter deep thought and analyzed the methods of training gunners. It was noted that there was no proper instruction in shooting, and that when the ships had target practice the gunners shot at hypothetical targets. The results were worked out by a system of observation and calculation; it was deduced that had there been a target of a certain size, the shots would have hit it often enough to have produced very satisfactory percentages, and these were announced as the target-practice results. Thus the Navy, Congress, and the nation thought that the gunners were really shooting well, especially when the difficulties of shooting from a moving, rolling ship were taken into consideration.

When these officers reported that the Navy was not shooting well, but in fact very badly, the Department felt a great shock. Especially did the bureaus which were responsible for the gunnery feel that their credit was at stake; under the organization of the Navy Department it was possible for them to resist for some time the reforms which the "iconoclastic" officers, mostly juniors, wished to have introduced. But the criticisms became persistent; and when the bureau chiefs refused absolutely to consider them seriously, some one went directly to the President. He knew something about marksmanship with guns, big and little, and he thought that he saw some reason in the contentions of the young officers who had been keenly watching what other nations were doing. The President ordered some reports made; these he considered carefully and then ordered a new system of gunnery put into practice. The accuracy of aim and rapidity of fire were so improved as to increase the efficiency of the guns to an unexpected degree. Formerly the big guns had a standard time of five minutes between shots; now they can be fired twice a minute. Formerly they seldom hit the mark; now they make 80 per cent., and better, of hits. A similar improvement was made in the firing of smaller guns.

GUNNERY A GAME OF CONTEST

As the result of the innovations prescribed, a better system of target practice for the training of individual gunners was adopted, so that the record of each man could be known with accuracy. By this system every gunner was placed fairly in competition with the others. All the officers throughout the service who commanded divisions of guns were left entirely free to devise the best possible methods of making their weapons effective, being restricted only by safety regulations. The result was that gunnery became in all essential features a game. Hundreds of division officers developed new "plays," that is to say, new methods of training; and the consequence was that progress was extremely rapid. The "game" is still developing in much the same way as football and base-ball, and other competitive tests of brain and brawn.

This keen competition necessarily brought out all the defects of the mechanism, of the sighting arrangements, and everything which offered, or seemed to offer, obstacles to faster and more accurate work with the guns. Suggestions for improvements were considered carefully by the bureau officers, and it is due in large part to the intelligent criticisms and suggestions of the gun-officers that the Bureau of Ordnance has been able in the past four or

five years to make very important improvements. These improvements seemed entirely essential to success in battle practice, where ships fire at from 5,000 to 9,000 yards. They have now been practically completed and the results are apparent in the scores made by the ships recently engaged in the successful long-range battle practice in Cape Cod Bay.

This improvement is due directly to the personal stimulus of the President, who has followed the details to such an extent that naval officials consider him a competent gunnery officer.

There are two kinds of target practice—ship practice in the autumn and individual gun and gun-pointer practice in the spring. Ship practice is at short range, but the individual practice is under battle conditions at long ranges and in various kinds of weather. Secretary Metcalf insisted that the practices should really train the men to meet an enemy, and naturally it would not be possible to stipulate that an action should take place in smooth water and with clear skies. The enemy, in fact, would most likely choose conditions which would embarrass the object of his attack; so the fleet must be ready to fight in rough weather, in fogs, in storms, by night, or else be able to slip away at such times and bring on an engagement when conditions were more favorable for success.

EVERY SHIP A GUNNERY SCHOOL

There are no gunnery schools for the training of gun-pointers, each ship being its own gunnery school, in constant and severe competition with all the other ships in its class. An important advantage in this is the financial saving. In many foreign navies the cost of gunnery schools alone is greater than that of the ammunition we use for target-practice. Ammunition costs a lot of money. A 12-inch steel armor-piercing shell costs $350, and the powder to send it six miles with force enough to pierce the side of a battleship costs $252. A cast-iron shell costs $40. For target-practice the steel shells filled with high explosives are closely simulated by shells made of cheaper materials and filled with sand to give the proper weight. The training of the gun-pointers must be done with the big guns, but without the expense of firing them; so an ingenious arrangement has been perfected by means of which a 22-calibre target rifle is attached to the great turret gun, either within its bore or alongside of it, but in either case parallel to the axis of the big gun. The gun-pointers manipulate the big gun just as they would do in actual gun practice, but when the electrical connection is made to fire the 12-inch gun, the tiny target rifle speaks and the bullet hits a miniature target rigged a few yards distant on the end of a spar. The result is exactly the same, and the finding of the target is as effective as it is when the huge guns speak and the shock rocks the ship. But the real shooting is necessary also, for expertness is not all the game. The gun-pointer must have nerves like steel. Often a man who does perfect work at the sub-calibre practice will tremble so that he cannot keep his gun on the target when he knows that he is in competition with other gunners for the trophy.

KEEPING THE GUN ON THE TARGET

The real secret of the new system is the continuous aim. This requires two gun-pointers to each gun — one to find and keep the range horizontally, the other to do the same thing perpendicularly. The guns are all equipped with telescopic sights, and across the field of the telescope are two fine lines crossing at right angles. When the intersection of these lines is on the target, the gun may be fired — and the gun-pointers are expected to keep it there, no matter how the ship rolls or how fast it may be traveling, or whether the target is bobbing about like a cork. With two men keeping the gun always on the target, the gun-captain watches his crew as they load, noting every movement and correcting any mistakes by signs, for his voice would not be heard in the uproar. As soon as the charge is jammed home and the breech-block safely closed he can fire his piece.

There is little room to spare in the gun-turrets. Every man has his place. Down in the magazine, the ammunition men send up the powder and projectiles as rapidly as they can be taken away by the loaders. They also have been trained and they are determined that their mates in the turret shall not be able to say that the ammunition lagged and that they had to delay a shot because the projectile was not ready when they needed it. When the word is given, the crew spring to their work with the agility of panthers. They are all athletes, trained in team work. Each knows exactly what he is to do, and no acrobats

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DRILLING ON SHORE WITH FIELD ARTILLERY

play into each other's hands better than the men behind the gun. One false move may not only cost the ship the trophy, but may even result in an explosion.

Preceding target practice, the men on the whole fleet are keyed up to the highest expectation. For months the admirals, captains, commanders, gunnery officers — everybody from highest to lowest — has been thinking, talking, planning, how to improve the ship's gun fire. The gunnery officers study out all kinds of problems in the light of past performances, and jot down many queer memoranda in their "dope books" to guide them when, on the all-important day, they stand aloft in the tops and shout down through rubber tubes their judgment of the distances, and directions to the gunners regarding wind, range, and elevation.

When the time comes for the trying-out practice in the spring, the expectant gun-pointers have done all they can in advance to perfect their work. The question now is, will they be able to keep their nerves steady when the stress of action comes? There is a great deal at stake. For the gun-pointers themselves, there are individual rewards; if they prove to be accurate and reliable pointers, they are chosen to aim the guns at the fall battle practice, and they receive an additional $10 a month in pay. Then there are trophies for the best ships in each of the four classes, and prizes of money for the best turret crews. These turret prizes are usually pooled, and it is worth while to belong to the best turret crew on the ship, and still better to be one of the prize turret crew of the fleet. Besides all this, there are letters of commendation for the champions from the Secretary of the Navy.

A BATTLESHIP IN ACTION

Imagine a battleship going to target practice. It is stripped for action. Yonder is the target, at the apex of an isosceles triangle the sides of which are 1,600 yards long. At each end of the base line is a buoy. When the ship reaches the first buoy, the first gun crew will be given the word to fire. Every eye is on the target, a piece of canvas 17 feet wide by 21 feet long, stretched between two spars and fastened to a raft, which is anchored in position. The battleship steams over the course at ten or twelve knots, an easy cruising pace. In the turret is the gun-crew, stripped to the waist — tense, expectant, determined to win the prize. The ship bears down on the first buoy. At each gun, with stop-watch and notebook and pencil, stands the umpire, who will see that no error goes unrecorded, no advantage is taken. Now the ship is opposite the first buoy and its whistle gives a screech; but not a man moves. In a moment comes the order, "Load!" Then the tableau is transformed into action.

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A LANDING PARTY EXECUTING "ACTION FRONT," WITH RIFLEMEN IN RESERVE

Both guns are worked at once and, before any chance civilian spectator can get his bearings, the order has been given to fire. One of the great rifles emits a roar and a sheet of flame, then recoils with the shock but instantly recovers; and all on deck watch the black speck of the projectile as it speeds over the water at the rate of something like thirty miles a minute. Before it strikes the target another shell is on its way from the other gun; and seemingly regardless of the gun's recoil or the ammunition chute leading down to the magazine, and up which the projectiles and powder sections come on the ammunition hoists and are snatched away by the gunners to be shoved into the hot breeches of the big rifles. The minutes pass swiftly. The gun-pointers incessantly work the wheels of the massive machinery which moves the great gun as if it were a small telescope. The

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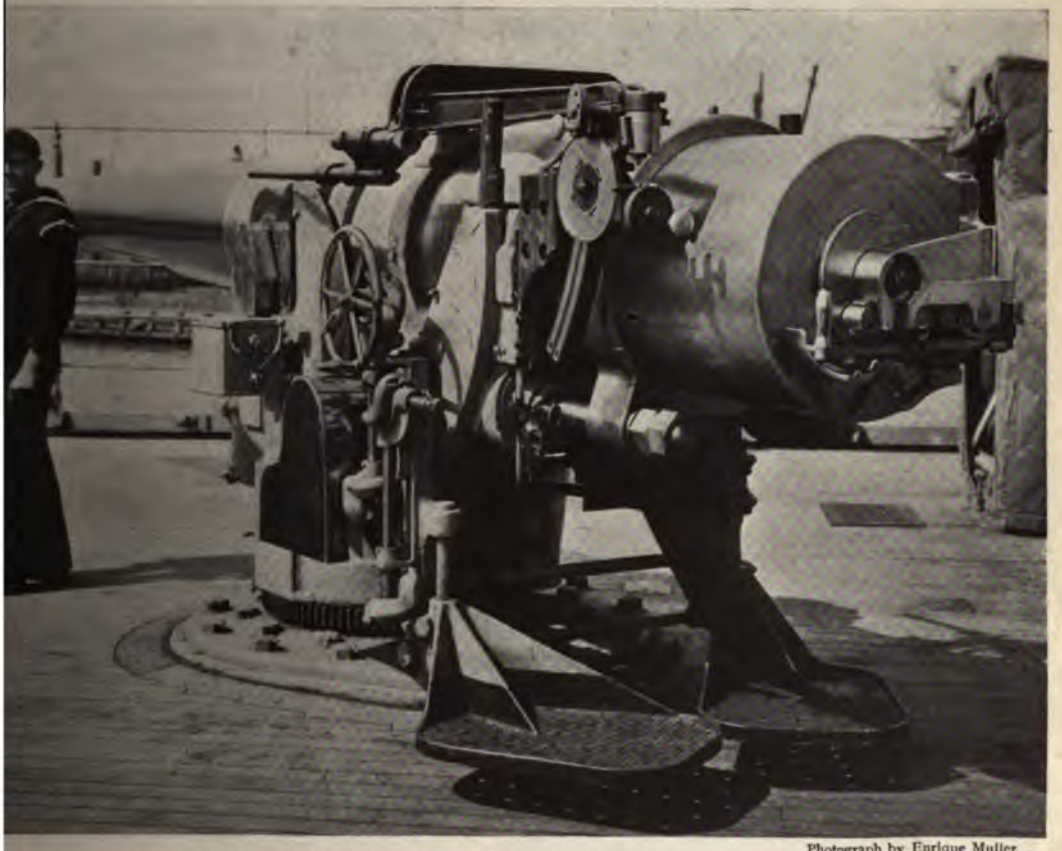
A GUN-CREW OF THE "OLYMPIA" LOADING ONE OF THE 12-INCH RIFLES

and so the guns alternate, the gunnery officer in the top watching the splashes with his ten-power binocular and shouting down the tube to notify the pointers whether their aim is high, low, or to either side. Automatically they correct their sight-bars, and the loading, electrical ramming, gun-pointing, and firing go on with the greatest apparent confusion, but really with the most perfect order. The men jump to their work with the greatest activity, apparently in one another's way, turret slowly but smoothly moves to keep the target in view. The various mechanisms give forth their own peculiar sounds. The men strain every nerve to get in as many shots during their time allowance as possible.

Suddenly the umpire raises his hands and calls "time." The men instantly stop and the trial is over. There is a dash for the scuttle-hole leading to the deck, where the gun-crew may get pure air and information about the shots. If the trial has been a

ful one, the word is instantly passed , the sailors cheer, and the gun- re carried around the deck on the rs of their mates, who are eager for the of the championship to fall to their ship. one from the captain down to the st and newest apprentice takes part in ilation. If the score is bad, the partic- ulprit whose error at a critical moment used the bad record may be sent to

Reference has been made to improvements in naval ordnance. What these improvements mean may be judged from the fact that whereas some of the 6-inch rifles but five or six years old can be fired only six times a minute, the latest ones can be fired twelve to thirteen times a minute. A man who can make six hits a minute is twice as effective as one who can make but three hits with the same gun. Both make perfect scores, to be sure, but the man



Photograph by Enrique Muller

ONE OF THE BIG GUNS OF A UNITED STATES BATTLESHIP

Its projectile will penetrate a modern warship at a distance of several miles

ntry" by his disappointed shipmates. hile, the ship has been making a long nd is coming back for the second trial, e gun-crews and their officers are busy ready. The boat tending the target ing up a new canvas to replace the one has been shot full of holes. After the ave all had their tests, the marines take urns at the six-pounders. At Guantan- he men have practice with small arms n excellent rifle range having been made perhaps the best in the world.

making the six hits is equal in action to two men and two guns making but three hits each. However, if the three-hit man has a gun which has a capacity of but three shots a minute, he is getting the maximum out of it and should therefore have credit for a perfect score, even though the six-hit man gets no more credit, it being assumed that the limit of rapidity possessed by his gun is six shots a minute. Carrying the illustration a point further, if the six-hit man has a gun which can be and has been fired twelve times a minute with accuracy, and he

makes but six shots and hits, he is entitled to but 50 per cent., while the three hit man is entitled to 100 per cent.

The spring target practice being the preliminary trial of individual gun-pointers for the battle range practice of the fall, the scores made are of the greatest interest. There are gun-pointers who make perfect scores with both the 12-inch and the 6-inch rifles. That is, there are records of from ten to twelve

TARGET PRACTICE ON BOARD THE "BALTIMORE" IN MANILA BAY

THE GUN AT THE MOMENT OF FIRING

shots and hits in a minute from a 6-inch gun, every shot being practically a bull'seye. Also, the 12-inch rifles have to their credit perfect scores for individual guns at the 1,600-yard range, and these scores were made at the rate of two shots a minute or faster, as rapidly in fact as the guns could be loaded by the most practised crews.

Naturally there is great interest in the fleet over the annual ship practice. This is held at ranges so long that the 5-inch, 6-inch,

A RAPID-FIRE SIX-POUNDER IN ACTION ON BOARD THE "BALTIMORE"

and 7-inch rifles are practically of no efficiency, on account of the high trajectory necessary to enable their projectiles to carry to the target and the resulting difficulty of getting accurate aim with them. It was found, however, in Cape Cod Bay last September, that the 12-inch and 13-inch rifles could score from 30 to about 70 per cent. of hits on a 30 by 60-foot target when handled by the most accurate pointers. It is accordingly apparent that, up to five miles, an enemy's ship would be almost sure of annihilation by a single broadside from any one of the battleships of the United States Navy, assuming, of course, that the officers and men had received proper drill at the guns. It must be admitted that some of the ships have made very poor showings at target-practice, but this has usually been the result of insufficient drill on new ships or with new crews, or to some failure of makeshifts in use pending the installation of the regular appliances.

At the battle practice the ships fire broadsides, practically every gun at once, so that the

EXTRACTING THE EMPTY SHELL

records of individual guns do not count. It used to be the case that only half of the big guns could be fired at a broadside, but naval constructors now build the ships so that every gun of the main battery can be fired at the same target if desired. It is estimated that the battleships of the United States could fire away all their ammunition in an engagement lasting an hour and a half, but no fleet in existence could withstand such fire for more than a few minutes; so the alleged lack of ammunition is never likely to tempt hostile fleets into an engagement, especially if our ships go into battle with their magazines full.

THE USUAL APPEARANCE OF A TARGET AFTER THE FIRING OF A BIG GUN

AMERICAN OFFICIAL RECORDS

Our naval officers do not hesitate to admit that the revolution in American sea-gunnery was inspired by and based upon the work of the British; but they claim that our gunners have now far outstripped the British, who alone have been within measurable distance of us in gun efficiency. Reports received by the Navy Department from Great Britain show that the average score of the English navy with 12-inch guns was .583, hits per minute; and it is said that if our records were computed in the same way, the average would be .99. That is equivalent to saying that American gunners can put 12-inch shells into the target at the rate of one a minute, approximately, averaging all the guns, while the British gunners hit the mark about once in one and one-sixth minutes. But we have a complex system of scoring, and the actual percentage of hits is not indicated by the official scores of the Navy Department. These are intended to show the relative merits of different ships and fleets, however, and so it may be of interest

A GUN CREW WHOSE HEART IS IN THEIR WORK

to give the official standing of some of the ships of the American Navy, so far as they have been made public in an official order from the Navy Department, dated June 3, 1907:

Standing of fleets.

Atlantic fleet	59.726
Pacific fleet	59.241

Standing of squadrons.

Order	Squadron	Vessels that fired.	Final merit.
1	Second squadron, Pacific fleet.	Boston, Chicago, Charleston, Yorktown, Princeton, Preble, Paul Jones.	74.866
2	Second squadron, Atlantic fleet.	Illinois, Kearsarge, Kentucky, Alabama, Indiana, Iowa, Ohio.	62.456
3	First Squadron, Atlantic fleet.	Missouri, Maine, Yankton, Hull, Macdonough, Worden, Truxtun, Whipple.	56.587
4	First squadron, Pacific fleet.	Maryland, Colorado, Pennsylvania, West Virginia, Raleigh, Chattanooga, Galveston, Cincinnati, Barry.	56.555
5	Third squadron, Atlantic fleet.	Tacoma, Des Moines	55.515
6	Fourth squadron, Atlantic fleet.	Paducah, Dubuque	55.383
7	Third squadron, Pacific fleet.	Concord, Wilmington, Paragua, Pampanga, Arayat, Elcano, Rainbow.	40.650

Vessels competing for the battleship trophy.

1.	Illinois, trophy winner	75.782	
2.	Kearsarge, star ship	75.428	
3.	Kentucky, star ship	70.832	
4.	Alabama	64.357	
5.	Maryland	62.178	
6.	Indiana	62.153	
7.	Colorado	61.623	
8.	Missouri	59.934	
9.	Pennsylvania	54.605	
10.	West Virginia	54.119	
11.	Iowa	51.585	
12.	Maine	48.707	
13.	Ohio	37.120	

Vessels competing for the torpedo trophy.

(Torpedoes only counted.)

1.	Preble	92.062	
2.	Truxtun	85.243	
3.	Wilkes	82.640	
4.	De Long	82.082	
5.	Stockton	81.896	
6.	Macdonough	72.321	
7.	Blakeley	62.003	
	Hull	62.003	
	Paul Jones	62.003	
	Whipple	62.003	
11.	Barry	41.273	
12.	Worden	39.685	
13.	Stringham	10.318	

At the recent target practice at Cape Cod, the records according to the size of the guns are shown in the following official statement:

"All 12-inch and 13-inch guns averaged 30.7 per cent. of hits; 8-inch guns averaged 27.0 per cent.; and 5-inch, 6-inch, and 7-inch averaged 16 per cent. Out of twelve battleships firing, but three made low scores, less than 15 per cent., with 12-inch and 13-inch guns; the remaining nine ships made from 25 to 67 per cent. of hits. With 8-inch guns, three ships made from 6 to 16 per cent., the

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THE PORT GUNS OF THE "LOUISIANA" READY FOR A BROADSIDE

Properly aimed, their fire would destroy an entire fleet

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HOISTING A GUN ON BOARD A NEW BATTLESHIP

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TAKING AMMUNITION ABOARD THE "INDIANA"

remainder making from 27 to 57 per cent. All the above percentages include the ranging shots used for determining the distance from the target. If these shots are eliminated, the percentage of hits of the remaining shots, which represent the real battle efficiency, would be much higher. Had the target been as large as the profile of a battleship, it is estimated that at least twice as many hits would have been made."

It is said by naval officers that the principal fault with the old system was that it was based on calculated results; the gunners did not fire at an actual target and count only the holes as hits, but they fired at a small triangular bit of canvas about 10 feet high, which served only as an aiming point. The splash of the shot was noted by observers on a boat abreast of the target or on a ship, and calculations were afterward made to tell whether the shots would have hit a hypothetical target 25 feet high by 100 feet long. By this method, naval authorities convinced themselves that our gunners could shoot, but as soon as the President forced the Department to adopt a small target 17 by 20 feet, it was immediately demonstrated that our shooting was far from accurate. At the first target practice under the new conditions only 13 per cent. of hits

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FIRING A SALUTE WITH BLANK SHELLS

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THE CRUISER "BROOKLYN" IN NEW YORK HARBOR

was made. Now, the ship which does not make about 75 per cent. of hits is disgraced.

It was by no means an easy thing to bring about a change in the target practice system. The way it happened is interesting. One of our officers in the Orient investigated the work being done by the gunners on the *Terrible*, commanded by Captain Scott, now an admiral, of the British Navy. Captain Scott had adopted the idea of continuous aim, and his excellent scores astonished the officers of other squadrons then in the Chinese waters. But he had the greatest difficulty in getting the British Admiralty to adopt his system, which is now in general use. The United States Navy adopted it two years in advance of the British. The system has been so improved that our officers believe that we are far in the lead of any other nation in the efficiency of our naval gun fire.

THE BUILDERS

I.

THE HOUSE OF MORGAN

BY

C. M. KEYS

IN SEPTEMBER, 1907, Mr. J. P. Morgan was practically a retired capitalist. He had returned from a long holiday in Europe, laden with treasures of art. He had leased a house in Richmond, Va., and had planned to cap the summer with a month of quiet enjoyment with the clergy of the Episcopal Convention, to which he was a lay delegate from St. George's, New York. The arms of financial battle were laid aside. Gracefully and easily Mr. Morgan drifted toward the peaceful haven of old age.

But the trumpets of battle brayed in Wall Street, and the hordes of panic swarmed against the walls of capital. Wall Street cried aloud for a leader. A hundred men there were ready for the task — great bankers, skilful financiers, railroad magnates who had come to the front in the long years of prosperity, winning for themselves great wealth and names greater, perhaps, than the names of the giants of yesterday. But who would follow them? One man, and one man only, could fill the rôle of leader. The admirals and the generals of prosperity gave silent place to the war-worn veteran who had led the financial world up from the panic of "ninety-three."

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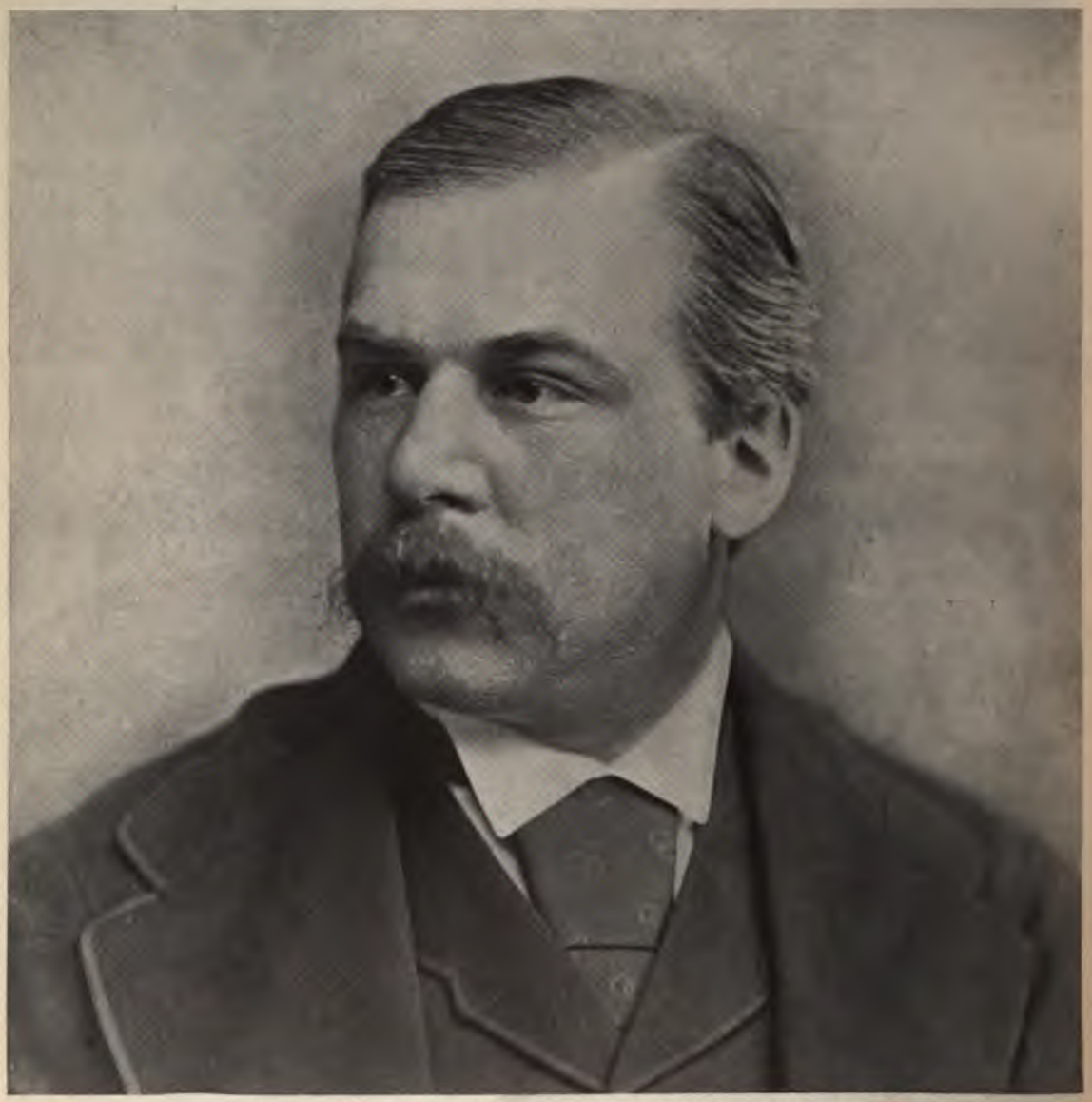
MR. MORGAN'S LIBRARY AND ART MUSEUM, ADJOINING HIS RESIDENCE

His collection of paintings and tapestries is one of the finest in the United States

And so he came to his triumph Everybody knows the sequel, how a handful of determined men, clustering about Mr. Morgan, stood in the midst of the torrent of panic, dammed it with gold and many words, turned it aside at last and broke it into a thousand little streams to be met and conquered at leisure, as the time may come. Few men saw the thing itself in the doing. Day after day the captains of finance, both high and low, came trooping to the Morgan office to talk a little, to get their orders, then to go and do the part assigned to them. Night after night in the Morgan library the kings of the Street held council, sinking their mutual differences, laying their wealth and their power in the hands of this one man.

During those days of panic, Mr. Morgan was the undisputed king. The white marble office at 23 Wall Street was the centre of the financial world. From it radiated a thousand lines that covered the "downtown" section like a net. Was a bank tottering here? Mr. Morgan knew it almost before its own directors did. Was a trust company running out of funds there? the Morgan agents stood at its back



MR. J. PIERPONT MORGAN, WHEN IN THE PRIME OF LIFE

MR. MORGAN AS HE APPEARS TO-DAY

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MR. MORGAN AND MR. ROBERT BACON

Mr. Bacon is now Assistant Secretary of State

door with gold and bills to save it. As a great private banking house trembled in the gale, the hands of Morgan steadied it. Into the Stock Exchange, on that terrible afternoon when not a dollar was to be borrowed on the Board for love or usury between the hours of one and three, he poured twenty-seven millions at an hour's notice — twenty-seven millions when the springs had all run dry and the great banks clung like misers to every dollar in their tills.

This achievement was possible, not because Mr. Morgan had in his own tills any tremendous supply of cash. It was not his money that saved the country from a panic that might have run to fearful lengths. It was the money of the banks, of the capitalists, of the private banking houses of Europe, of the world. Mr. Morgan alone could command that money for the needs of Wall Street. That has always been the secret of his power — his ability to command the money of the nations to do his bidding. It was this power that made the Steel corporation possible, that enabled him

Photograph by Brown Brothers

WALL STREET DURING THE RECENT PANIC

Anxious depositors making a run on The Trust Company of America; the office of Mr. Morgan on the right

Photograph by Brown Bros.

THE OFFICE OF J. P. MORGAN & CO.

On the corner of Wall and Broad Streets

Photograph by Brown Bros.

MR. J. P. MORGAN, JR.

Heir to the Morgan name and fortune

to reorganize the Erie, the Southern Railway, and the Northern Pacific, when perhaps no other man could have accomplished these great deeds. A dozen other men are richer than Mr. Morgan, but in such times as these they are the first to come, as Mr. John D. Rockefeller came in person in October, and lay their wealth in Mr. Morgan's hands, to be used as he sees fit.

How he gained this almost uncanny power over the minds of other men is a problem for psychologists. It is certain that he holds it. Other men have it, but in less degree. Mr. Harriman has it, but only in his own immediate circle. The Moore brothers have, at times,

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MR. GEO. F. BAER

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MR. GEORGE W. PERKINS

Photograph by Gutekunst

MR. CLEMENT A. GRISCOM

Photograph by Randall

MR. CHAS. S. MELLEN

A PART OF THE MORGAN FINANCIAL CABINET

Mr. Baer is president of the Reading Company; Mr. Mellen, president of the N. Y., N. H. & H. Railroad; Mr. Griscom is steamship adviser; Mr. Perkins looks after the details of all financial transactions

MR. MORGAN HEADING THE DELEGATION TO WELCOME PRINCE LOUIS OF BATTENBERG

Copyright, 1905, by G. G. Bain

Photograph by Brown Bros.

MR. MORGAN'S STEAM YACHT, "THE CORSAIR"

shown it in a remarkable degree, notably in the crisis of their fortunes that followed the failure of the Diamond Match campaign ten years ago. Every successful promoter must have it to some extent, and his success is in direct proportion to his possession of this faculty. But with Mr. Morgan it circles the world. America has followed him for twenty years. England and even canny France unlock their treasuries at his behest.

He was six months past his seventieth birthday when he came to the rescue of Wall Street in October. He was born at Hartford, Conn., on April 17, 1837. His father was the late Junius Spencer Morgan,—himself, at the time of his death in 1890, a banker of imposing wealth and international renown. His mother was, before her marriage, Miss Juliet Pierpont, daughter of a poet and reformer. The Morgan family is old, tracing its American line back to Miles Morgan, who came to this country in 1636 and founded Springfield, Mass.

The old Morgan homestead, now gone, stood on Asylum Hill, Hartford, and it was for its day an imposing home. It indicated easy circumstances, thrift, Yankee enterprise. Years ago, the elder Morgan was a partner of Mr. Levi P. Morton in the dry goods business; later he formed his own firm. In time he became a partner of George Peabody, and found his great opportunity in the banking business. The firm had its headquarters in London and dealt around the world, as is the way with the British banker. In the end

Photograph by Brown Bros.

MR. MORGAN'S RESIDENCE

on Madison Avenue, New York City

ON THE WAY FROM HIS YACHT TO HIS OFFICE

Photograph by Brown Bros.

THE SOCIETY OF THE LYING-IN HOSPITAL

One of his most beneficent charities

Photograph by Brown Bros.

ST. GEORGE'S MEMORIAL HOUSE

No. 207 East Sixteenth Street

the firm became J. S. Morgan & Co., and so continues.

Mr. J. P. Morgan has never known poverty. His boyhood was easy and uneventful. His school-days, in this country, were spent in the Hartford schools and in the English High School, Boston. His education was finished with a short course in Göttingen, Germany. Then he plunged into business. In 1857, he became a clerk in the banking house of Duncan, Sherman & Co. Two years later his father's firm made him its agent and attorney in the United States. Later he became a member of the investment house of Dabney, Morgan & Co., who dealt in bonds. That continued until 1871, when he entered the firm of Drexel, Morgan & Co., and thereby became a financial power in the land.

So far the tale is conventional. It is the record of a rich young man following the easy trail blazed for him by his father. Yet, just before the Drexel partnership, one may, by

THE NEW YORK TRADE SCHOOL, FIRST AVENUE AND SIXTY-SEVENTH STREET

A practical gift of Mr. Morgan to New York City

diligence, discover the first trace of the Morgan of to-day. It was the time of the Erie wars. Gould and Fisk, holding the hapless Erie, had tried to capture the Albany & Susquehanna Railroad. The fight had been long, bitter, and spectacular—the courts, the legislature, and the market being, as usual, pawns in the game. Suddenly, in a pause between the moves, in stepped this young banker from New York, and, before the litigants had caught their breath, the Albany & Susquehanna was rescued from their clutches, leased to the Delaware & Hudson Canal Company, and was far beyond their reach. This came to pass in February, 1870. Merely as a coincidence it may be noted that it was barely six months before the date on which Mr. E. H. Harriman became a member of the Stock Exchange. Thus, the most spectacular of our latter-day financiers—the one from the wealthy home at Hartford, the other from the poor little parsonage on the Jersey flats — drew abreast and started upon the long careers in which they were destined, again and again, to clash and come to combat.

The years that followed were years of steady growth, but slow. The house of Morgan moved up the banking scale, but it did it by sound, regular, quiet banking methods, not by any great spectacular accomplishments. Drexel, Morgan & Co. worked in close harmony at all times with J. S. Morgan & Co., of London, and carried on their business under a code that was only a little less English than the English. By 1879 we find Mr. J. P. Morgan voting the proxies of the English holders of New York Central stock. That meant that the firm had gained the confidence of a strong, rich, conservative British clientage. The confidence has never been lost. There have been many changes in the Vanderbilt road since then, but Mr. Morgan still may vote the English proxies.

In the twenty-year period from 1870 to 1890, Mr. J. P. Morgan was hardly the head of the firm. His father, Junius Spencer Morgan, continued active in business to a ripe old age. The Paris house of Morgan, Harjes & Co. was founded and grew steadily, gaining confidence and [illegible] solid, substantial [illegible] the firms of J. S. Morgan & Co. in London and the American house of Drexel, Morgan & Co. During this period Mr. Morgan did not appear to be a [illegible] to the promoter. He mastered the mysteries of foreign exchange, dealt in money, specialized in commercial paper in large blocks, and, in general, carried on the calling of an English banker of the highest class. Incidentally he made his word as good as his bond in every market in the world.

In 1890 he became the head of the three great houses that bear his name. Two years later, one finds him interested in the formation of the General Electric Company, an industrial combination of the class loosely described under the term "trust." By that time the power of the Morgan firms had become tremendous. Yet it was little understood. Men had no yard-stick to measure the power of such a house as this, for the thing was new in the land. Dimly it was realized that the firm of J. P. Morgan & Co. had grown to a stature hitherto unknown; but men tried to find a parallel in the house of Jay Cooke & Co., and in many other banking houses of the past.

The truth came to light suddenly. The panic of 1893 came down upon the world. The Sherman Act of 1890 had practically put silver on a par with gold. The drop in the commercial price of silver from $1.21 per ounce to 67 cents had shaken the currency structure to its foundations. Gold flowed away from the Treasury and out of the country as water from a leaky pail. In vain had the Government poured $50,000,000 gold into the vaults in 1894; that, too, had disappeared. In January, 1895, panic again swept the country. Nothing, it seemed, could stop it.

In February, 1895, a syndicate of bankers, headed by Messrs. J. P. Morgan and August Belmont, offered to buy $62,000,000 worth of Government bonds at [illegible], and pay for them in gold. It was a [illegible] contract. It was carried out, and the panic was stayed. The syndicate delivered to the Government [illegible] of gold. At the same time it [illegible] to stop the outflow of gold from the country. [illegible] that every man who [illegible] gold [illegible] [illegible] By that act, in spite of the [illegible] J. P. Morgan [illegible] the head of the [illegible] of Morgan [illegible]

[illegible]

knowledge and of public record. Men may remember a few simple facts, and pin upon them their knowledge of the greatest financier of our time in any country. The Reading Railroad Company collapsed because of dangerous ambitions on the part of Mr. A. A. McLeod: Mr. Morgan took it and set it on its feet. The Northern Pacific was ruined by war and high finance: Mr. Morgan planned it anew and sold its bonds around the world. The Richmond Terminal fell into obvious ruin: Mr. Morgan made of it the Southern Railway. The Erie strained to the breaking point, and broke: Mr. Morgan lifted it from the mire and set it on its feet—not too solidly, yet on its feet. The Lehigh Valley, the Hocking Valley, the Monon, a dozen other smaller railroads, all have come to the office of J. P. Morgan & Co., seeking money for their salvation or for the gratification of their legitimate ambitions. None has gone away empty-handed.

He has stood like a wall behind the Vanderbilt roads, the Louisville & Nashville, the Atlantic Coast Line. No man who went through 1901 in Wall Street will ever forget the way he threw his forces into the fight for the Northern Pacific. And when the smoke had cleared away, he was the man chosen by both sides to be the arbiter. He named the board of directors.

Underlying all these railroad reorganizations and explaining many things that otherwise would be inexplicable, there is a great principle. It is "the Morgan way." One can hardly explain it better than by quoting the words of Mr. Morgan himself, used in telling the world why he had precipitated the panic of 1901 by his laconic order to buy 150,000 shares of Northern Pacific stock in the market:

"We had reorganized the Northern Pacific. We had placed all the securities of the Northern Pacific. I feel bound in all honor when I reorganize a property to protect it, and I generally do protect it; so I made up my mind that it would be desirable to buy 150,000 shares of stock, which we proceeded to do."

In that brief statement one may find the explanation of many things. It tells the reason why Mr. Morgan placed the Southern Railway, the Erie, and many other railroads in voting trusts, so that they could not be captured by raiders. It supplies the secret of the terrible Morgan anxiety to save the Louisville & Nashville from the clutches of the Gates syndicate in 1902. Perhaps it even supplies the key to the puzzle of the Cincinnati, Hamilton & Dayton, for if Mr. Morgan had not stepped in to take this road when he did take it, no man may say how far the consequences might have run.

This sketch, so far, has been concerned with railroads. But it was not as a railroad reorganizer that Mr. Morgan reached the pinnacle of his fame. The formation of the United States Steel Corporation is undoubtedly the biggest thing that he has ever done. It brought him fame; it brought him for a time, into obloquy. When the thing was done, seven years ago, the world was staggered by the size of it. The glamour of a "billion-dollar trust" dazzled men's eyes. Mr. Morgan assumed gigantic proportions both at home and abroad. Thousands of the shares of the stock of this company were taken in the corners of Asia and Africa, in places where no Amercian securities had ever been bought before. To this day the checks for dividends travel half around the world. This single episode, the greatest of the many episodes that have marked his history, made Mr. Morgan the biggest figure in the financial world of his day, or, perhaps, of any other day.

The utter collapse that followed is a matter of acute remembrance to most men who read. In 1904 one heard men curse the name of Morgan from one end of this country to another and far beyond the "seven seas." The sharp and terrible reaction from the hero-worship of 1901 made him out a monster, a "corsair," left him hated by thousands. That hurt Mr. Morgan, and, so far as the world knows, it is almost the only expression of popular opinion that ever did affect him. In any event, the day when the Steel Trust resumed its common dividends, in the early autumn of 1906, was one of the happiest days that has come to him in many years. Once more he had "stood by" his company.

If the Steel Corporation was the biggest of the "Morgan trusts," it was not by any means the only one. He has been concerned in the Rubber consolidation, in the General Electric Company, and in many smaller companies to a less degree. In 1902, he attempted to form a monopoly of the transatlantic steamship lines. He failed. He was able to bring together the White Star, the Leland, the Red Star, the Atlantic Transport, the American, and the Dominion lines, dominating about 40 per cent. of the tonnage across the sea,

but there his power ended. He met the solid opposition of the British Government. The Cunard line stood out against him. The "underwriting" fell flat, and failure marked the enterprise. Some day, doubtless, the judgment of Mr. Morgan about this plan will be justified. In the meantime the loss through this undertaking seems to have fallen not upon the outside public to any great extent but very largely upon the house of Morgan and its own particular friends.

Another incident must be touched on in even the briefest sketch of the career of this great organizer. That is the American Shipbuilding Company. It is the belief of the public that J. P. Morgan & Co. were directly involved in that shameful fiasco. As I understand it, this is not true. Not a dollar of Morgan money went into the company; nor did one word come from the Morgan firm to induce the public to go into it. Mr. Daniel Leroy Dresser did go to Mr. G. W. Perkins, Mr. Morgan's junior partner, and ask for subscriptions on the ground that if the firm would come in many others would follow. That help was declined. In the end, J. P. Morgan & Co. deposited money in certain trust companies which lent the money to Mr. Dresser and his friends; but this is, so far as I have been able to discover, the full extent of the Morgan participation in this affair, except that he sold the Bethlehem Steel Company to the new combination.

Through this long period of tremendous work, from 1890 to 1905, Mr. Morgan appears not so much a man as a dynamic force. He was a terrific machine. His slightest word was law in Wall Street. By a phrase he could make or unmake the market. Hundreds of men made big fortunes by selling out their companies to the Morgan trusts. In almost every case they stood ready to go in again with Mr. Morgan in almost anything that he should propose. Every stockholder of the Erie Railroad Company except one or two left his stock in his hands without question, and took the voting trust certificates. The Southern Railway stockholders did the same. Whatever he asked, men did. In fact, it became mere nature to follow him and to do what he asked or ordered.

To the public Mr. Morgan came to be known as a tyrant. Few tales were told of him that did not reflect the popular impression about his character — that he was abrupt, domineering, almost brutal in his manner. He is abrupt. He is direct. He is almost inevitable. But there is not in the man any trace of brutality. To his friends he is a prince. To his social friends, not many of whom are his business associates, no man may speak in disparaging terms of him, for they are all loyal, and all are attached to him in bonds of a wonderful regard. His friendships are intense. His hatreds are equally intense. He has never been known to forgive an affront nor to forget a favor. He has never sold out his friends nor parleyed with his enemies.

His whole financial life has been devoted to the elimination of competition. He does not believe in competition. He does not believe in anything that implies waste in any form. He threatened to crack together the heads of the Pennsylvania and the New York Central Railroad companies if they did not stop fighting. They made a "gentleman's agreement" and stopped. "I don't want men standing up in the street and fighting!" he said, in answer to the question why he had made peace with Harriman over the Northern Pacific. He formed the Steel Corporation to do away with disastrous price-cutting and wasteful practice in manufacture. His mercantile marine was founded on the idea of a monopoly, to eliminate rate wars on the sea. He considers a man who would cut a railroad rate wantonly as an enemy to his country, a fool to himself, and a traitor to his stockholders. The Morgan roads keep the schedule.

To keep peace meant, in many instances, to give help to weaklings. One day, after the Cincinnati, Hamilton & Dayton episode, Mr. Perkins put it succinctly when he said to a crowd of reporters:

"This is a hospital — bring on your wrecks."

And a hospital the Morgan office has been for years. No man can say how many cases were treated in it in the single month of last October, how many operations were performed, nor how the patients came out of them. A few of them did not survive at all, but that was not the fault of the hospital.

The administrative power of this firm is wonderful. It extends to a hundred activities. Railroads, steel companies, telephone companies, manufacturing companies, street railways take orders from the Morgan office. Mr. Morgan's system is strikingly unlike the system of Mr. Harriman, for instance. Mr. Harriman must see everything for himself,

must know details, must bother with the thousand and one incidentals that concern the running of a property. Mr. Morgan does not want details. He wants broad lines to work upon. He is content that Mr. Clement A. Griscom shall attend to the details of the steamship business, that Mr. George W. Perkins shall handle the task of finding out the details of any financial transaction, that Mr. Baer or Mr. Mellen shall understand the railroad deal that is in hand. He wants results: the details are unimportant to him.

One day in the Federal Building, Mr. Lamb, the lawyer for Peter Power, cross-examined Mr. Morgan about the purchase of $15,000,000 of Northern Pacific stock in 1901. The financier sat on one side of the table; the lawyer on the other.

"How much did that stock cost, Mr. Morgan?" said the lawyer.

"I don't know."

"Well, about how much did it cost?"

"Haven't any idea."

"How much did your firm make out of it?"

"I don't know."

"Well, did you make one million or ten million?"

"I tell you I don't know. I don't attend to the details. I said, 'Buy it': Steele knows about the details; he'll tell you about that!"

That laconic "Buy it!" came over the cable from Aix-les-Bains, and startled even the partners of Mr. Morgan. They did it, however. When he speaks, the thing is done. That is the only rule of command in the office of J. P. Morgan & Co.

One day, a couple of years ago, Mr. Mellen, the president of the New York, New Haven & Hartford Railroad Company, went to Philadelphia to try to force from the presidents of the hard-coal roads better terms for the New Haven on shipments into New England. The presidents snubbed him. He came back to New York, went over to see Mr. Jacob H. Schiff, and secured a one-day option on the controlling interest in the Ontario & Western, which taps the Scranton coalfield. Then he went over to see Mr. Morgan.

Mr. Morgan was in Boston, at a bishop's reception. Away went the railroad president; he hastened to Boston; he invaded the precincts of ecclesiastical society, in a plain business suit. He found Mr. Morgan, and drew him over into a corner. In a hundred words he explained the necessity of getting the coal line. Mr. Morgan listened without a word. When the plan had been unfolded, he said:

"You know what you are doing, Mellen: go ahead and do it. We will pay for it."

The next day the option was closed — and the New Haven Road put a spoke in the wheel of the Hard-Coal Combine — in which, by the way, Mr. Morgan is himself heavily interested.

Mr. Morgan makes big men. He does not tie the hands and the feet of the presidents of the railroads in which he is interested. He does not crush the life out of his lieutenants. He gave the Southern Railway to the late Samuel Spencer to run to his heart's content. This same Mr. C. S. Mellen, as president of the Northern Pacific under Mr. Morgan, grew big in the eyes of the great Northwest. He took Mr. Robert Bacon, just out of college, and made him a member of the Morgan firm, gave him a position in the business world, and set his feet upon the path that led him to become Assistant Secretary of State. Out of a life insurance agent, he made Mr. George W. Perkins, financier. He works at times with strange materials, but he gets results.

In pleasure as in business, Mr. Morgan is a strenuous man. His luxuries are many, but they come under three main heads: yachting, charity, and collecting. He has been commodore of the New York Yacht Club; he has helped to build a cup defender, the *Columbia;* and he owns the *Corsair*, one of the biggest and finest of the "millionaire fleet." He has given $1,350,000 for the building of the Society of the Lying-in Hospital, on Seventeenth Street, New York; $500,000 for the New York Trade School on First Avenue; $300,000 for the parish house of St. George's, on Sixteenth Street, New York; $1,000,000, to Harvard University; $500,000 toward the building of St. John's Cathedral, New York; and lesser sums to a hundred other causes, such as the Loomis Hospital, the Young Men's Christian Association, and a library at Holyoke, Mass. He gave to St. Paul's of London its electric light plant.

His fondness for collecting takes many forms. His collection of collies has been written about so much that everybody knows of them. He has given a great collection of fabrics to the Cooper Union, a collection of gems to the Museum of Natural History, of Greek ornaments to the Museum of Art. In his own library, attached to his residence, he has

collected many of the finest treasures of painting, of rare books, of tapestries. His agents in the past five years have overrun Europe. But he has not lent himself to sacrilege; he has not pillaged churches nor defamed temples.

Mr. Morgan has been twice married. His first wife, who was Miss Amelia Sturges, died in 1862, after one year of married life. The present Mrs. Morgan was Miss Frances Louise Tracy, and they were married in 1865. There are four children, one son and three daughters. The son, who will take the place of his father at the head of the three firms, is J. P. Morgan, Jr. He has been carefully trained for his great work. For years he has been active with J. S. Morgan & Co., London, learning the trade of a conservative banker, growing in knowledge, He is to-day a man of forty, well-settled, steady, solid.

This young man, known in Wall Street as "J. P., Jr.," or sometimes as "Jack Morgan," is the coming man — so the financial prophets say. Men who do business with him are unanimous in their opinion that he is to be a "second J. P."

"You go in and talk with him," said one banker of my knowledge, "about some underwriting. He lets you talk. After a while, he tells you 'Yes!' or 'No!' and that's all there is to it. He is always pleasant, courteous, and even cordial — but you know he knows his business from the start."

That is merely a snap-shot picture; but it is all that anybody can get, so far. The young man has thus far inevitably been overshadowed by his father. In the late financial crisis he stood close beside his father, working with him. It was almost the first chance that Wall Street men had to see him clearly, and they like his ways.

How great is the heritage he has been trained for no one can say. The personal fortune of Mr. J. P. Morgan has been estimated, by conservative authorities, at $50,000,000, and at $200,000,000. Probably, the later figure is far too high. The "money-power" of the Morgan firm, however, is far beyond even that high figure. Experience has shown that, at times, this firm has been able to command the coöperation of the Bank of Commerce, the First National, and the Chase National, three of the biggest of the New York banks. In the private banking field, allies are innumerable. A "Morgan syndicate" usually includes a very large number of the strongest private bankers in Wall Street, Boston, and Philadelphia. The London firm is also powerful, and Morgan, Harjes & Co., of Paris, command wide respect in the French Republic. In all, it is a wonderful kingdom, this Morgan heritage of power.

In closing this sketch of Mr. Morgan, it is right to say that "the Morgan way" is open to criticism at times. Even in his late triumph it is not well to forget that he took advantage of the needs of the Trust Company of America to secure for the United States Steel Corporation the control of its most dangerous competitor, the Tennessee Coal & Iron Company, at a very low price. To do it, Messrs. Gary and Frick went to Washington, and, according to newspaper reports, made sure that the skirts of the Morgan company would be clear from any possible charges of "restraint of trade." Of course, the Tennesee Coal & Iron Company is not a Morgan concern: the Steel Corporation is. But the United States Steel needed the open-hearth steel facilities of the Tennessee Coal & Iron Company; the holders of that company needed money. Mr. Morgan "stood by" his own company: he has declared that he always will, "let who will pay the bill!"

Similarly, the New York, New Haven & Hartford, Mr. Morgan's favorite railroad, stepped in during the panic and secured control over a collection of electric lines projected to rival the New Haven in Westchester County, New York. In that matter the influence of Mr. J. P. Morgan was paramount. The transaction is questionable. One may go back and adduce from the history of the past ten years a dozen similar instances.

Yet, when all is said and done, the figure of Mr. Morgan, a septuagenarian giant, casts its shadow across the world. I know many of the financial leaders of the day personally as well as by their deeds and works. Of them all, Mr. Morgan seems the biggest, the broadest, the most daring, the most inevitable. Twice he has stepped into the ranks to save his country from a panic that might have led to results too disastrous to talk about at a time like this. These things will be remembered when whatever is dubious of his exploits in high finance is forgotten and gone.

PRESIDENT WOODROW WILSON AND COLLEGE EARNESTNESS

THE CAREER AND THE AIMS OF THE PRESIDENT OF PRINCETON UNIVERSITY, WHO HAS MADE THE MOST NOTEWORTHY CHANGE IN COLLEGE LIFE OF THIS GENERATION

BY

ROBERT BRIDGES

WITHIN the past few years President Woodrow Wilson has instituted at Princeton a change in the methods of instruction so radical as to be almost a revolution in American college procedure. The preceptorial system, now in its third year, has been closely watched by experts in education, and has incited the intelligent curiosity of college men everywhere. The system is a natural evolution from the personality and ideals of President Wilson — a practical application of beliefs that he has long held. The man himself is in it.

There has been little that is casual or accidental about the career of Dr. Wilson. To those who have known him longest he has seemed always to be growing according to a well-thought-out plan. His various achievements have fitted so exactly into his scheme of life that those who watched him as he worked would have been disappointed had he not arrived at precisely the eminence that he has attained. As an undergraduate he went about his business with the confident selection of a man who knew what it was that he had come to college to obtain. He showed an easy indifference to those studies and methods that were not in accord with his own ideas of work, an indifference that might have brought him into some trouble with a system as rigorous as the one that he has now instituted at Princeton. His mind, even in those early days, was a nimble and well-trained instrument that enabled him to do easily and well any task that he set for it. But there were certain fields of knowledge that did not seem to him worth while. Indeed, for the mere accumulation of knowledge he has always shown an indifference approaching contempt. But no way was ever too arduous that led him to what he wanted to know.

His associates soon found out that his supreme interest was in those age-long endeavors of man to live and do his work with his fellow-men which we call Government. The whole human spectacle, the social evolution, the growth of institutions, appealed to him at an age when most boys are intensely interested only in the individual. Heredity had a great deal to do with this trend of his mind, for his forbears on both sides, in Scotland and in this country, had been students, professors, and men of leading in intellectual affairs. Moreover, he had been born in Virginia and brought up in the South, among a people to whom the theory and practice of government had always been of supreme importance.

The scholarly men of the Old South, with their well-thumbed libraries of English classics, had not become a mere tradition when he was a boy. It was shown in the casual talk of the undergraduate, as it is in the mature man, by a precision in the use of words and a care in their enunciation which is so foreign to the usual slap-dash vocabulary and picturesque slang of the college boy. With it all there was not a touch of the prig or conscious scholastic about him. It was his natural way of speech, and we accepted it, as we did the burr of the West or the flat "a" of Pennsylvania in others, as their birthright. He took a natural and even enthusiastic part in the varied and amusing aspects of college life, holding many positions of importance in the college world, from president of the athletic association to managing editor of the college paper, and whatever he undertook soon bore the impress of his capacity for leadership. His intellectual interests were a vivid part of his everyday life. He could enliven a dinner-table, dispute with quotations from Burke or Bagehot as naturally as other men would quote James G. Blaine from the morning paper. Knowledge was of importance to him only when it

was *alive* and human in its application. And that continues to be his creed as an instructor of youth and an expounder of public questions.

THE MAN FINDING HIS WORK

"Every phase of life outside of the family circle," he once said to me, "is public life; and the business of all education is to fit men for public life—that is, life in relation to the social organism." He exemplified this belief in his own education. His particular contact with the social organism, his special work growing out of his aptitudes, was to be that of a student and expounder of the processes of government. Naturally, therefore, he became a close investigator of history and law, and in his mind the two are inseparable. He took the law course at the University of Virginia and for a time practised law in Atlanta — a period when the paucity of clients left abundant leisure for systematic study in his chosen field. The first draft of his "Congressional Government" was made in those days — but the germ of it went back to his senior year at college, when he had had accepted by the old *International Review* a striking essay on that subject. He found that the business of law did not lead his mind in the direction that he would have it go. He was not afraid of drudgery, but it was not his chosen drudgery. With his accustomed foresight he knew that it was not his pasturage; he therefore, with a light heart, jumped the fence. At Johns Hopkins University he found a most congenial atmosphere and contact with many minds engaged in original research. There he completed for his doctor's degree the work that was soon published as "Congressional Government" and that gave him, in his twenty-ninth year, a position of acknowledged importance among the interpreters of our institutions. The book has held its position for more than a score of years as the best exposition of our system of government by Congressional committees, and when Mr. Bryce wrote his "American Commonwealth" he embodied, with warm appreciation and credit, many of its elucidations of our processes in government.

The book showed a dignity of style and a persuasive charm that are unusual in treatises on political subjects. It was evident that here was a writer who believed that the fine art of literature should be used in writing about politics. Many years ago, in one of his essays, he announced his firm conviction on this point: "Politics can be effectually expounded only by means of the highest literary methods. Only master-workers in language and in the grouping and interpretation of heterogeneous materials can achieve the highest success in making real *in words* the complex life of states . . . In order really to know anything about government, you must *see it alive;* and the object of the writer on politics should be nothing less than this, to paint government to the life, to make it live again upon his page." This is what he has aimed at in all of his writings. He is none the less a man of letters because the material of his books is not in the field of the imagination. Even his treatise on "The State," which covers a very broad field in a relatively small compass, has graces of style and felicities of expression not often found in "compendiums" of political information. In his historical writings — the admirable biography of "George Washington," the brief summary of American politics from 1829 to 1889 in "Division and Reunion," and the more elaborate "History of the American People" — his clearness of statement and power of re-creating past events are conspicuously exemplified.

HIS BREADTH OF EXPERIENCE AND VIEW

His judicial fairness is shown in all his writings, particularly in his volumes of essays, "An Old Master" and "Mere Literature." He is a Southerner born, educated in the Middle States, and he has taught in a New England college. Therefore his enlightened political judgments impress the reader by their breadth of view; he not only has this historical perspective of a trained student, but he has the very human insight and understanding that comes from having lived with many kinds of Americans. The judgments formed by what he calls "mere library calm" have never appealed to him. "Are not Professor Bryce and Mr. John Morley more to be trusted in their books because they have proved themselves worthy to be trusted in the Cabinet?" he pertinently asks. He has all his life sought contact with men of affairs. Converse with men of light and leading has been to him a significant part of his enlightenment. He has lectured and made speeches and informal addresses in most of the states east of the Mississippi and in several beyond it. He has been sought not only by collegiate

audiences but by bar associations, boards of trade, patriotic societies, and political assemblies. To all such meetings he has given the best of his thought on the subjects of their special interest, and he has taken away with him the best that their leading spirits had to offer. "Stimulating" is a word that he is fond of applying to a man or a book. The spoken or written words that send a spark through his intelligence, that call forth an answering signal, are worth while in human intercourse. His own oratory has this stimulating quality, so that his audiences feel the warmth and brightness of his intellectual convictions. It is a delight to hear him elaborate an idea — touching it with humor here and there, pointing it with occasional trenchant satire. The persuasiveness of his diction, the aptness of his literary allusion, and the evident sincerity which is never solemnity, combine to make his speeches a pleasure even to the indifferent diner-out, and a tonic to the intellectually alert.

It is not surprising, therefore, that with this equipment and this engaging personality he has so impressed himself on men of intelligence in many walks of life that he has been spoken of as the right man for political offices of the highest dignity — Governor, United States Senator, and President. The compliment of such suggestions is no doubt appreciated by him — all the more because they have come from such varied sources, and often from alien or unsympathetic minds. The significant thing to him is that certain political ideas for which he has always frankly stood should have met with the approval of men who are actively interested in the business of government. If he has been or is a point for the crystallization of such ideas, then his career as a student and expounder of political problems has not been fruitless. He has so "painted government to the life" that those participating in it acknowledge the worth of his portraiture.

His political point of view was well set forth in his recent Jamestown address: "Liberty consists in the best possible adjustment between the power of the government and the privilege of the individual: and only law can effect that adjustment." Our present predicament, our present task is the

"finding of the *individual* in the maze of modern social and commercial and industrial conditions; finding him with the probe of morals and with the probe of the law . . . It is only in this way that we can escape socialism. If the individual is lost to our law, he is lost to our politics and to our social structure. If he is merged in the business group, he is merged in the state, the association that includes all others . . . Let every corporation exactly define the obligations and powers of its directors, and of its several officers and managers, and then let the law fix responsibility upon them accordingly . . . Governmental supervision there must be, but of the kind there has always been in District Attorneys' offices; not the kind that seeks to determine the processes of business, but the kind that brings home to individuals the obligations of the law . . . There is no other possible formula for a free government than this: that the law must deal with individuals, allowing them to choose their own lives, under a definite personal responsibility to a common government set over them; and that government must regulate, not as a superintendent does, but as a judge does; it must safeguard, it must not direct."

"PHILOSOPHER, GUIDE, AND FRIEND"

Such, in brief, has been the career of Dr. Wilson as a student and man of letters — an earnest thinker, speaker, and writer on social, literary, and political questions. But his business in life, that crystallization of thought into action of which he so often speaks, has been as a teacher of young men, and since 1902 as president of Princeton University. His career as a professor at various institutions was notable from the very start. He made his impress on his students so that his reputation spread far beyond his own classrooms and he was in constant demand as a lecturer at other institutions. He delivered regular courses at the New York Law School and at Johns Hopkins University while filling the chair of jurisprudence at Princeton. This gave him wide knowledge of young men at the threshold of varied professions, and they in turn spread the knowledge of his vital personality to other institutions. As a result he was marked long before he was forty as good timber for a college president. Probably no man of his years ever had so many college presidencies offered to him — and said less about them. When the chieftainship of his own university was offered to him no one was more taken by surprise than he. He was the first layman who ever had the opportunity to be president of Princeton in its century and a half of corporate existence. There was never a broader opportunity offered a man in his position. He was in the

prime of life, at the head of a university to which he had the strongest personal attachment, and he had the enthusiastic support of an efficient board of trustees and a large body of alumni, several thousand of whom had been his contemporaries and his pupils. Here was the chance to prove whether one who had such intimate knowledge of the processes of government had also the constructive ability of an organizer and the executive ability to carry out his ideals.

In his inaugural address he made very clear just what were his ideals for the university. In no uncertain words he set up the standard by which he was to be judged. A timid man in the presence of so conservative a body would have hesitated so clearly to define his position. At a time when the whole tendency of colleges was toward specialization he announced: "What we seek in education is full liberation of the faculties, and the man who has not some surplus of thought and energy to expend outside the narrow circle of his own task and interest is a dwarfed, uneducated man." And he added: "I believe general training, with no particular occupation in view, to be the very heart and essence of university training." Instead of a university department-store, where each student came to purchase a certain definite commodity, he pictured as his ideal university one with the two-fold object of "the production of a great body of informed and thoughtful men and the production of a small body of trained scholars and investigators," and these two functions were "not to be performed separately but side by side, and informed with one spirit, the spirit of enlightenment, a spirit of learning which is neither superficial nor pedantic, which values life more than it values the mere acquisitions of the mind . . . We must deal in college with the spirits of men, not with their fortunes."

From that day to this Dr. Wilson's whole energy has been devoted to making real at Princeton his statement of the ideals of a university. It has not been an easy task — constructive work is never easy, particularly when it is applied to an institution with a long and honorable array of accepted traditions and precedents, most of them as dear to President Wilson as to any alumnus.

The first task that demanded his attention was the reconstruction of the curriculum. Princeton had an elaborate elective system, instituted by Dr. McCosh, and courses of graduate study. But the liberty of choice gave the student often a heterogeneous assortment of unrelated fragments of learning. For the coördination of courses Dr. Wilson laid down the principle that the student should be allowed a certain liberty of choice, but that his choice must be confined to *groups* of studies and not to widely scattered units of knowledge. "We must supply the synthesis and must see to it that, whatever group of studies the student selects, it shall at least represent the round whole, contain all the elements of modern knowledge, and be itself a complete circle of general subjects."

Through the instrumentality of a most efficient committee the curriculum was reconstructed on these lines; and for four years it has been tested and found a good working basis for a university education. This was the new president's first contribution to practical constructive work for the university.

STUDENTS "PERSONALLY CONDUCTED"

Having given "a new touch of system and consistency" to the courses of study, the next problem to which Dr. Wilson set himself was the improvement of the methods of instruction. The glaring defect in a large university, as contrasted with a small college, is its loss, through multiplicity of students and courses, of "the close and intimate contact of pupil and teacher." In spite of the many unquestioned advantages of a great university, this one defect has been present in the minds of those who think deeply on questions of education. Large classes have the tendency to formalize instruction; what Dr. Wilson wanted to do was "to take our instruction, as much as possible, out of the formal class-rooms and get it into the lives of the undergraduates." He sought to coördinate (a favorite word of his) the social and intellectual life of the students, so that the things of the mind should be an intimate part of their everyday life; so that they should not "do tasks" but "pursue interests."

The laboratory method used in the physical sciences had to a great degree solved this question of the intimate acquaintance of pupil and teacher. Dr. Wilson saw that something similar to the laboratory method must he applied to what we call the "humanities." For many years he had thought about this subject and when he announced,

as his proposed solution, "the preceptorial system," it was the result of a long maturing purpose. Through the loyalty and liberality of the alumni of Princeton, he was enabled immediately to put the scheme into action. It involved the addition of fifty new men to the faculty, at an expense of more than $100,000 a year; but the trustees, backed by the alumni, said "Go ahead;" and the plan, which Dr. Wilson has never called "an experiment," was instituted and, in the autumn of 1905, put in working order.

The preceptorial system has been compared to the system of tutors at the English universities; but, while having some points of resemblance, it has more points of difference. The Princeton preceptors are not "coaches" preparing men for set and formal university examinations. The most succinct statement of it is in Dr. Wilson's own words, in one of his annual reports, written after the system had been put in working order:

"Accordingly, the function of the preceptor is that of guide, philosopher, and friend. In each department of study each undergraduate who chooses the department, or who is pursuing all the courses offered in it in his year, is assigned to a preceptor, to whom he reports and with whom he confers upon all of his reading in those courses. We try to limit the number of men assigned to one preceptor so that they may not be too numerous to receive individual attention. He meets them at frequent intervals, singly or in small groups, usually in his own private study or in some one of the smaller and quieter rooms of the University, and uses any method that seems to him most suitable to the individuals he is dealing with in endeavoring to give their work thoroughness and breadth; and the work they do with him is not of the character of mere preparation for examinations or mere drill in the rudiments of the subject, but is based upon books chosen as carefully as possible for the purpose of enabling them to cover their subjects intelligently.

"And the gentlemen I have named are not the only preceptors. We are all preceptors. Under the new course of study the undergraduates choose not only a department with all of its courses, but also a few other electives which they follow without attempting all the courses of the departments to which those electives belong. The lecturers who conduct the courses thus singly or separately chosen themselves act as preceptors for these students, members of their classes but not of their departments, in respect of the reading that must be done in those subjects; and our new method is making its hold good upon all of us.

"One way of stating the nature of the change is to say that now the reading of subjects is the real work of the University and not intermittent study for examinations: that the term work, as we have been accustomed to call it, stands out as the whole duty of the student; and the amount of work done by the undergraduates has increased amazingly."

It will readily be seen that the successful working of the system depends in a great measure on the kind of men who are preceptors. The greatest care was taken to choose not only scholarly men but men whose personality fitted them to be "guide, philosopher, and friend." No election is for more than three years, and the arrangement can be terminated at the end of one year. A wise cosmopolitanism was used in making a selection. Princeton opened the gates to men from universities all over the world. Among the preceptors are men from Oxford, Cambridge, Harvard, Yale, Columbia, Dartmouth, Bowdoin, Johns Hopkins, the German universities; from Western universities like Iowa State College, and the University of Wisconsin; from the South, such as Hampden-Sidney and the University of Texas. They are young men, most of them graduated since 1895. They were glad to come because they believed in the system, and there was something inspiriting in being a part of an advance in university methods. These men have brought something of value to Princeton from the rest of the world, and they in turn are getting something from their contact with Princeton life. They are growing men and are pursuing systematic work in their chosen fields of study at the same time that they are guiding the undergraduate. All are working together and making vividly real what so few college students suspect, that "it is really a pleasure to use your mind if you have one," and that "learning is a rare form of enjoyment." The only criticism heard is that of the lazy student who complained to his father: "If this thing keeps up, Dr. Wilson will make Princeton an educational institution!"

Undoubtedly all the men work more, but they are still able to play baseball and football and golf with the best of them; and the infirmary shows no increase of patients from overwork. The students are becoming "reading men" and the University librarian testifies that "it is a matter of extraordinary gratification to wake up suddenly to the fact that the best ideals of all modern thinkers in the matter

of training to reading and to the use of the library have been realized overnight without special exertion, and as a sort of by-product of the new system." In short the system has brought about "a rejuvenation of study" at Princeton, and with it a feeling of having been "emancipated from school and mere tutelage."

THE PROPOSED "QUAD" SYSTEM

As another step forward in this coördination of the social and intellectual life of the university, President Wilson proposed the much discussed "quad system." For many practical reasons, which cannot be here elaborated, the committee of the trustees withdrew their report on the plan. But as a part of Dr. Wilson's well-formulated ideal of university education, it is bound to make itself felt somewhere, sometime. He believes that the university is a part of the public life of the country, and is a training-school for citizenship; he would bring the social and intellectual life of the university even closer together, so that, in the best sense, it shall be a *democratic institution.* He believes that six "quads," of two hundred men each, including in them members of the faculty, living in adjacent groups of dormitories and dining together in common halls, will create a broader social and intellectual life than the close association of groups of ten or fifteen men.

"I am not an educator," he recently said to me, "and never have been one nor want to be. I despise the mere accumulation of knowledge. But I want our students to feel the formative influence of the university in their lives. I want to make them good citizens of this democracy. They can't get that from an exclusive association with a small coterie of congenial spirits. They must have contact with many kinds of men and have a chance to know their professors and instructors. All college men can't be great scholars but they should become good citizens. I have, all my life, looked on education as a public question, intimately connected with the welfare of the State. I believe in the method of John Witherspoon, who applied the same principles to the life of the college that he did to the life of the State. He produced men like James Madison and "Light-Horse Harry" Lee, who made their impress on the State because he had turned their minds in the right direction toward public questions."

President Wilson is an idealist, but he always has shown himself to be a practical idealist. He is constructive and executive, and in some form or other his ideal of university life will reach its fruition.

HEALTH RESOLUTIONS—GOOD AND BAD

THE DISCOURAGEMENT OF RESOLVING TO DO TOO MUCH, AND THE IMPORTANCE OF BEING DEFINITE

BY

DR. LUTHER H. GULICK

GOOD resolution may be looked upon as a sort of labor-saving device in the business of healthy living. Its ness lies in the fact that it deals certain practical issues in advance of ctual presentation: thus, the course of being already determined, the arguments l con do not need to be canvassed later. ing at his past life calmly from some f vantage like that of a vacation in ds, a man may be impressed with that he does not get enough exercise in the city; he may admit to himself that he could get a decent amount of it if only he would make up his mind that way. He could be walking in the open air half or three-quarters of an hour every day during the week, and on Saturday or Sunday he could put in several hours of wholesome physical activity — helping his digestion, his temper, his brain, and his business by so doing. A sober resolution to follow such a schedule for a certain length of time in the future gives him a running start at achieving a very useful habit.

When responsibilities press upon him, when the day seems crowded full of engagements, when all the impediments set by natural inertia, bad ventilation, laziness, and so forth block his way to out-of-doors, his resolution comes to his rescue. His only alternatives are to get there somehow, or else to sacrifice his self-respect. The issue does not need to be overhauled and discussed anew every day; the moral courage required is of a simple kind, merely a matter of being true to your word, not a difficult and nerve trying decision on any nicely balanced merits of argument.

The most important test of a good resolution is whether or not it is attainable. If a good resolution has no chance of being kept, it is the kind of thing that is said to pave the road to hell. Good resolutions are resolutions that are not too good.

RESOLUTIONS THAT CAN BE KEPT

Not that a man's reach shouldn't exceed his grasp; that is another matter. What I am trying to say here is that a man must have a grasp, and a grasp that holds with a bull-dog grip. To make up one's mind to do a thing without taking sober account of what it involves is mere foolhardiness. Every time you deliberately take hold of a thing, meaning to keep hold, and then let go because you can't help it, you are worse off than you were before. You are simply getting practice in failure.

Scrutinized by common sense, many good resolutions turn out to be preposterous. To adhere to them might compel a man to move into an entirely different environment, away from his family and friends. They might interfere with his health or with his neighbors or with his happiness in life.

A man says, for example, when the repentant fit has come upon him: "It's all wrong for me to lie abed in the morning as I do. During the coming year I'll do better. I'll get up at 6.45."

What happens? We all know perfectly well. And then you sigh, "Well, there goes another of those good resolutions!" and in consequence you are weaker, less self-respecting, less qualified for undertaking a new venture.

The fact is that you have been grossly unfair to yourself; you have imposed upon your moral strength; you have not taken into account your experience in the past; you have not considered the "psychological climate" in which you live. These are important and not-to-be-neglected elements of the situation. Your sense of values is perverted. To be quite candid, what real use is there in your getting up at 6.45? Probably you have an inherited sentiment about it; it seems more virtuous to you than a longer sojourn in bed; but an analysis of the case will lead you to the conclusion, likely as not, that your sentiment is not based on logic. You did not take into consideration the specialized conditions of modern city life. You were merely fighting against the stars in their courses. You aimed at a theatrical brand of goodness, not at the steady, workable, everyday sort of thing that has a part to play in practical life.

Success is a habit that may be cultivated like any other; and it has a more wholesome push in it than the habit of failure. He is a foolish person who embarks upon enterprises for which his natural qualifications do not at all fit him. Failure begets failure.

THE DISCOURAGEMENT OF FAILURE

Take it in business. Men of affairs will hesitate a long time before they put in a position of responsibility a man who has failed two or three times in business, for the very reason, if for no other, that he cannot undertake a new venture with that necessary degree of confidence and assurance that business success requires.

Take it in athletics. The beginner in the high-jump will start with the stick at a height where he can jump it easily, and it will be a little raised every time he clears it. Finally, when the stick gets to a point where by the greatest effort he just succeeds in clearing it, an inexperienced trainer will put it up a little higher yet. "Make him try," says the trainer, and the jumper keeps struggling for a long time under conditions where he must almost of necessity fail. This excess of effort disturbs form. The result is that a man who is kept jumping under a standard that is too exacting for him never learns to jump so well as a man who is kept jumping most of the time well within his ability. The latter acquires perfect form, perfect control, and gradually reaches an increased height.

I do not mean that a good jumper never tests himself: he does, but the major part of his work is done under conditions where he can succeed.

Take it in the training of the feeble-minded. The most important, and at the same time the most difficult, thing to do for these unfortunates is to convince them that they can do something. Put a child that is mentally sub-normal in school with other children: no matter how hard he tries he cannot come up to the standard of the rest. He tries and fails. He is scolded, perhaps punished, and appears ridiculous. In the playground he cannot play with the skill and intelligence of his schoolmates; nobody wants him on his side in a game. In tag, he is always "it." The conviction gets rooted in his mind that he will fail, that there is no use in trying. And he quits trying.

The first great obstacle to progress with him is this experience of failure. The first problem of the teacher of the feeble-minded is to discover tasks which will be interesting and at the same time so simple as to be well within their grasp — tasks that will enlist their effort, and reward it. They must not be allowed to fail. The habit of success, of belief in themselves, must be established. That is the first great step. The mental attitude of hopelessness — which is inanition, paralysis — has been changed to one of hope, which is activity. When you are succeeding you can try harder than when you are failing.

We have a right and a duty — all of us — to hold in mind the measure of power and of attainment that we possess. As compared with men of genius, we are most of us feeble-minded; but does that excuse us from using our minds to the best advantage we can? Not a bit. Attainment is not to be judged by absolute, but by relative, standards.

The person whose undertakings are rightly proportioned to his capacity is the successful person; his relation to life's work is normal.

To come back, then, to good resolutions. Good resolutions are those that can be lived up to consistently, without capitulation, in the corrupted currents of this world — here in the midst of all the actual impediments, inhibitions, and distractions of our mortal environment. Every resolution kept increases moral grip; every resolution surrendered weakens it.

DO NOT OVERREACH YOURSELF

At epochs of moral house-cleaning, such as are supposed to occur at the end of the old year and the beginning of the new, we are sure to become aware of many undesirable habits in our lives; we see faults that ought to be eradicated; new lines of conduct that might helpfully be pursued. The natural tendency is to undertake too much at once in the way of regeneration, to attempt the impossible task of making oneself over completely. In the end that swarm of old habits — things ingrained, some of them, into the very fibre of our constitution — are bound to get the better of us. They can be pushed back for a time, as long as our wills can stand up to the task we have set for them; but eventually the will gets tired and relaxes its hold on the door. And then all the wicked old habits come pell-mell back again, much like the devils who sometime return bringing seven other devils beside, far worse than themselves. Thus the latter state of that man is worse than the first. He should have made the attack systematically, first on one devil, then on another, and not have attempted to lay them all out at once.

The resolution most to be recommended directs itself at *doing*, not at *being;* or, to put it differently, at *being*, as an end, through *doing*, as a means. Upon a concrete, objective thing-to-be-done one can fix one's attention — aim the attack: here is a particular habit to be cultivated in this or that particular way.

Pious resolutions to lead a better life during the coming months are not usually of great efficacy, just because they do not supply one with a handle that can be gripped: it is a fuzzy-minded, here-we-go-round-the-gooseberry-bush programme of self-betterment.

BE DEFINITE IN RESOLUTION

By the same token, a resolution to be more cheerful is not so commendable as a resolution to tell at least one good story at the breakfast table every day for a month; a resolution to be a better neighbor has less to commend it than a resolution to make at least one call a week; a resolution to take better care of one's health has less chance of holding its own against the whips and scorns of time than a resolution to spend at least half an hour in the open air every week-day.

In estimating our capacity we should not forget that there are various external props and safeguards to take advantage of. Not everything need depend on the will to be good.

A man *ought*, perhaps, to go to his office

every day. But that isn't why he does it. It does not occur to him to ask himself whether he ought to go or not. He's *got* to go: his salary, his reputation, his self-respect — these are all forces that give him a shove out of the front door even when he feels least ambitious.

So with certain good resolutions. I once asked a man who stands to-day in the forefront of modern philosophic thought, how he managed to get as much accomplished as he did. I knew him well. I knew that he was normally lazy.

He said: "I load my wagon at the top of the hill; then I get in front of it, and we start down. I have to keep ahead you see — that's all." What he meant was, not that he loaded his wagon foolishly; but that, taking his health, his strength, his other obligations into account, he decided what more it was wise for him to undertake, and then he put himself under bond, as it were, to undertake it. He would accept certain invitations to lecture: then he had to do it — and he was a splendid lecturer. He would agree with his publishers to have a book ready by such and such a time: then he got it ready. There was no way out of it. He would pay certain fees to take a course at a university; and then he was sure of going to the lectures, not only to get his money's worth, but also to save his pride.

That man's resolutions were practical, constructive — because he provided himself with the machinery of carrying them through. He didn't let the matter depend upon the nagging of a frail and easily-seduced conscience. It was good campaign tactics: estimating the exact strength of the enemy, and then making the utmost of one's available resources.

Resolutions like that, made under sane conditions of perspective and self-knowledge, are aids, never hindrances, to efficiency.

RUSSIA'S PERSECUTION OF THE DUMA

AN ATTEMPT TO VISIT THE POPULAR REPRESENTATIVES AT THEIR HOMES

BY

SAMUEL N. HARPER

[*The author of this article has recently returned from Russia and his information was gathered at first-hand*—THE EDITORS]

IN MOST countries "national representative" is a title of distinction, but this has not been the case with the members of Russia's first two Dumas. I had made the acquaintance of many deputies during the two short sessions of the Russian Parliament. After the dissolution of the second Duma, I set out to "look up" these men and learn local political thought and work from them. What I wanted to find was proof that the Liberal movement has not died out, in spite of an apparent indifference to politics in general and to the third Duma in particular. My task proved to be a most difficult one.

Reaction had again triumphed. I met repression at every turn and in every line. The reaction which followed the dissolution of the second Duma has been more oppressive than that which existed before the Liberal movement. The zemstvos, or provincial councils, are in the hands of the reactionaries. The peasants are being watched and guarded as they were never watched and guarded before. The ex-deputies have been the object of especial suspicion, and all this at a moment when the people have been asked to elect for a third time representatives to the national assembly. The story of my efforts to "look up" deputies will perhaps give the reader an idea of what the present reaction has meant.

One of the bolder newspapers printed a caricature entitled: "Why the Dumas have not been dissolved!" The caricature represented the inside of a prison; on the doors of all the cells hung the sign "Member of Duma." Thirty-seven of the fifty-five Social Democrats were arrested, though the Duma Commission had found the charges against these deputies to be without foundation. Mr. Ruban, the deputy from Samara, was not at home. His

family was in a destitute state. The neighbors hardly dared to give help. Mr. Komar, of the same district, had escaped across the frontier, so his brother thought, though of course he did not know his whereabouts. Other deputies were also "sitting," as the Russians express it. Very often even the elector to whom we had been recommended by a deputy was not to be found. He had been arrested or by administrative order "sent out" of the province. The hundred and seventy members of the first Duma were still under indictment. The Government keeps postponing their trial. In the meantime they are deprived of all civil and political rights. They cannot vote or hold office; they cannot even leave their place of residence without the permission of the police.

Such had been the persecution of former deputies that often those who were at home were not receiving. One peasant deputy, whom I had known very intimately, begged me not to stop when I visited his village. "I am so surrounded and hemmed in that I do not dare to talk or be seen with you," he explained. Another peasant deputy had told his peasant friends that he could not see even them, that the police were watching him and all whom he received. I was often advised by a deputy's friends not to compromise him by going to see him.

Many deputies were away — "taking a rest," their friends told me. Some had returned after the dissolution, but had gone off again immediately. One had stayed only long enough to hold a small meeting and report to his electors — and these electors had been arrested or "sent out."

The former deputies were all under strict surveillance. One peasant's house was raided while he was at work in the fields. The police confiscated his stenographic report of the Duma sessions, even the report of the secret sittings which the deputy had pledged himself to show to nobody. Father Gralewski, the Polish deputy who came to America last year to study our school system, was to be sent off to a distant province because of his Polish School Bill introduced into the Duma. He had just time to cross the frontier. Mr. Dmowski, the Polish leader, has been spending his summer abroad. He does not wish to risk exclusion from the third elections.

Many of the deputies had held posts in government and social service. All these have been dismissed. Alexis Bakunin, a nephew of the famous revolutionary, was turned out of a hospital where he had served for many years. The Governor, in answer to his protest, simply said: "I do not want you in this district where you have influence. I shall be glad to give you the highest recommendation for another district." Five other deputies were similarly expelled from zemstvo service — one governor frankly explaining that he had received instructions that all liberal ex-deputies were to be kept off the list of public servants. The wholesale expulsion of all employees that were suspected of being even Liberals is ruining the work of the zemstvo. In some districts the medical force has been reduced by half, and it had never been equal to the work in hand. Statists, agricultural experts, insurance agents, teachers, doctors have been dismissed — often exiled from the district — simply because the Administration thought that it had reason to doubt their political "trustworthiness." This mutilating of the zemstvo work is one of the saddest aspects of the present reactionary tendency, for it means the closing down of schools and hospitals, the stopping of that cultural work among the peasants which has been the invaluable service of the zemstvos.

It was hard to persecute peasant deputies. What could be done to them? Many were sent out of their districts; so also were their electors. This has greatly embittered the peasants. They openly express their sympathy for the persecuted ones; in instances, they tried to protect them. I found Mr. Baturov had been expelled from his peasant commune. This meant the loss of all civic rights and of a share of the communal land. The local official had ordered this expulsion, for it is done by the commune itself. Some peasants had protested, but these "unruly" ones had been arrested.

The priest deputies were not let off untouched. Four priests had belonged to the Labor group. Two of these have been unfrocked. Father Tikhvinsky, with whom I had many talks, was no politician but a simple and honest advocate of the people's cause. His speech against the field courts-martial was one of the most forcible heard in the Duma. But for this speech his consistory was ordered to unfrock him. He now wishes to study in the University of Moscow, but he will not be

admitted — for the reason that he would be a "demoralizing" influence among the students.

All this repression has discouraged some to the point even of renouncing their programme — one large land owner, a Liberal in the Duma, was a Conservative when I visited him on his estate. He was most bitter against his peasants. It is true that they had recently burned down his barn, but he could see in them only uncultured, ignorant animals. "It is hopeless trying to do anything for them," he told me. "We cannot even understand each other." But it is generally the fault of the gentry when they cannot understand the peasants.

My friend was tired of politics and was going back to simple zemstvo work and to consider his obligations as a citizen thus fulfilled. This is typical of the Russian intelligence. They lack stamina. But what can one expect of a people that have never been given civic or political responsibility?

But not all the deputies had lost heart. Many were continuing their work of organizing and educating the darker masses of the people so far as conditions permitted. I followed in the path of one radical deputy and heard of the meetings he had held. Some meetings had been successful, but most of them had been broken up by the police. Others were working more conspiratively, talking with individual peasants, explaining to them the significance of the new electoral law, with its unfair allotment of electors — which could only be interpreted as a direct affront to the peasant, the definite abandoning of their interests.

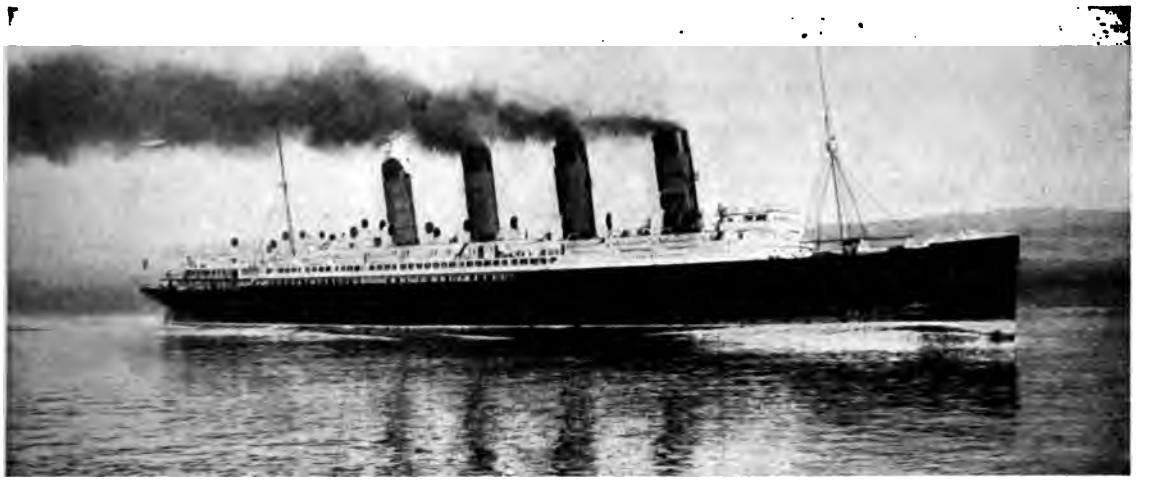
The Liberal deputies — in fact, all Liberals — were completely cut off from the peasants. They were either not trusted, or if trusted were unable to go to the peasants without compromising both the peasants and themselves. But they were developing their party organization, holding secret conferences, preparing for the elections, though they realized the hopelessness of victory under a law whose object had plainly been to exclude them from the Duma.

The Conservative deputies were less difficult to "look up." I met several at the zemstvo congress at Moscow. The zemstvo congress had just refused a bill prepared by the Government because the proposed measure gave too much authority to the bureaucracy over local self-government. This Conservative congress, in which the Liberals had refused to take part for fear of compromising themselves, stood out strongly against the arbitrary authority of administrative officials — that is, against the present government. Many say that the third Duma will resemble this late zemstvo congress. This will mean an opposition, and an opposition which cannot easily be put aside and neglected.

There were only seven reactionary deputies in the second Duma, representatives of the Union of Russian People. After the dissolution, this party seemed to have become almost the Government party. It agitated in a most insolent and shameless way. It alone was allowed to hold meetings openly. Where Liberal papers were fined for most moderate criticisms, the reactionary newspapers attacked any Liberal tendency of Mr. Stolypin with apparent immunity; they openly incited the people against the Liberals. The reactionary leaders had told me of their strong local workers. I looked up several and found them without convictions or political ideas. They had no numerical strength or actual organization. Mr. Pureshkevich had gone abroad to "recuperate after his hard work in the Duma." This "work" had been the provoking of scandals, for the most part. Mr. Krushevan had misappropriated the moneys of the Union entrusted to his care. The others were out collecting subscriptions, for the Union, which is proclaimed to be the party of all "sincere and genuine Russians" is out of funds. Its "millions" of inscribed members are not active members when money is being collected instead of being distributed. When one of the reactionary newspapers was actually fined and its editor asked the subscribers to pay the $500, his appeal brought in less than $20.

The "looking up" of deputies after the dissolution was not always successful. But it was instructive, for it showed the extent and intensity of the present reaction. If many deputies had gone away and others had been sent away, if some had given up the struggle and others saw no way of continuing it under present conditions, yet a great many were pushing on in spite of obstacles, in spite of persecution. For they feel, as the vast majority of Russians feel, that actual reforms must come, that the Liberal movement has been only temporarily checked. In fact, the present reaction is only breeding revolution. It is ruining the efforts of those Liberals who are working for reform through peaceful and legal methods. It is making more possible the ultimate necessity of a violent issue.

THE "MAURETANIA" PUTTING OUT TO SEA



A TRIP ON THE TWO LARGEST SHIPS

THE ADVANTAGES AND THE DISADVANTAGES OF FAST SHIPS
A COMPARISON BETWEEN THE ENGLISH AND THE GERMAN SERVICE

BY

F. N. DOUBLEDAY

MR. KIPLING, in one of the delightful verses in the children's "Just So Stories," pictures the real horrors of a storm at sea:

"When the cabin port-holes are dark and green
Because of the seas outside;
When the ship goes *wop* (with a wiggle between)
And the steward falls into the soup-tureen,
And the trunks begin to slide;
When Nursey lies on the floor in a heap,
And Mummy tells you to let her sleep,
Why, then you will know (if you haven't guessed)
You 're 'Fifty North and Forty West'!"

The happy truth is that, on big ships like these newest Cunarders, the trunks do not slide; and under any but the most extraordinary conditions they do not go "wop," though one must admit to many "wiggles." We passed through two very considerable storms, and even the skipper, with his natural reserve, called one of them "a full gale with heavy sea," though the landlubber would have described it as a gale and a half. Yet on the *Lusitania* racks were not needed, and your shaving brush stood erect on the washstand, and even your hand-bags lay quiet on the cabin floor. But all this is true on the *Baltic*, the *Amerika*, and the *Kaiserin Auguste Victoria*, and on the other ships of 20,000 to 25,000 tons.

LEAVING NEW YORK ON THE "LUSITANIA"

It was almost like a personal triumph to be one of those who stood at the rail looking down perhaps fifty feet at the crowd gathered to see the *Lusitania* off on her second voyage toward the east. You were a part of the show yourself, although you were hardly more than a pin-head along the great expanse of deck rail. The impression of bigness began when you entered the ship through a door on deck E — the lowest of the passenger decks, but far above the level of the dock. It would have taken a flying derrick to drop you on the promenade deck, where one boards most transatlantic liners. I will omit all figures as to size, the number of eggs consumed daily, the miles run, and other familiar similes which are put forth to give the last touch to the story of vastness.

THE SENSE OF BIGNESS

It does not take more than a few minutes

THE BOW OF THE "MAURETANIA" IN DRY-DOCK

to realize that you are on board a ship whose size exceeds that of any other afloat. She is so big that no mean economies of space need be thought of, and the great length and breadth of the boat are tremendously impressive. You walk down the wide corridors of deck B and have a vista many hundreds of feet long, which narrows in your sight like a passage in which two mirrors are placed opposite each other. But this is no optical delusion. You see the doors of staterooms without number until you feel that it must have taken a wilderness of mahogany to build this long street of doors and panels on the *Mauretania*.

You would say that for mere bigness this is the last word. Yet the builder told me that now, since the Age of Steel has come, there are but two things necessary for a ship twice as big: money to pay the bill and harbors deep enough to float her. One of the accompanying photographs of the *Mauretania* shows how very narrow and deep these great English ships are. An American shipbuilding authority prophesies that ships even bigger than these will be built; but they will have to be made after the American style—flatter, broader of beam, and not so deep. The draft of these English ships is too great for all but a few harbors. But much larger boats, with less draft, would go into all the principal harbors of the world.

The cabins are all large—a boon to any traveler. In addition to the two berths in even the inexpensive cabins you have a broad sofa with many pillows and a silk-shaded lamp in just the proper place to read by. Here, with a good book for your companion, you take solid comfort when the decks are wet. It makes no particular difference if you are down six flights from the boat deck, for elevators take you up and down in a jiffy—when the "lift boys" are not sick. These elevators, by the way, give you curious sensations when the ship is rolling. You start at the bottom with a distinct leaning to the right; perhaps by the time you reach deck C you are headed straight for the zenith, and when you land on deck A the car is pointed to the left. Small wonder that a special corps of boys will have to be trained for this whimsical, zigzag service.

The public rooms, so called, are all on deck A. They are beautiful, large, airy, and comfortable. The library, the lounge, the smoking room, each has its large and cheery open

THE QUADRUPLE PROPELLERS OF THE "MAURETANIA"

fire, in front of which chairs are always at a premium.

Back of the smoking-room is the veranda deck, sheltered on both sides but open at the stern and lined picturesquely with bay-trees, palms, and growing plants. The view, unfortunately, is cut off from the stern by the second cabin, so that you do not get quite the same sensation as in the observation room of a limited train.

A SIDE VIEW OF THE "MAURETANIA'S" PROPELLERS

The ship is intensely British. All the accommodations are arranged for the conventional passenger, who is supposed to say little, to eat anything that is put before him, and to worship at the shrine of brussels sprouts and plain boiled potatoes. No matter what the service is, he is expected to keep his place as a humble passenger. Rise, take your bath when the steward tells you, eat five tame and tasteless meals a day, go quietly to bed, and realize that the methods and manners of ship life were settled by the Cunard Company before you were born and will go on unchanged years after you have passed away.

A GREAT FINANCIAL ENTERPRISE

What interests and impresses one greatly in studying these great ships as a business enterprise is the two extremes reached by the venerable Cunard Company. It is practically backed by the English Government (otherwise the vessels could hardly have been built), which lent the huge sum of $13,000,000 at 2¾ per cent. and gives an annual subsidy of $750,000. On one side we see the extraordinary enterprise and courage which undertook the task of building ships larger by 7,000 tons than were ever constructed before, equipped with turbine engines of unrivaled power and speed; and on the other hand we see the company conducting its affairs, at least as it comes in touch with the public, in the same spirit of haughty independence for which it was famous forty years ago, when it had no

competition in transatlantic trade. What makes it all the more surprising is that these new boats depend entirely upon the good-will of the public, for they are not arranged to carry any freight other than a small amount of express matter. Their earnings must of necessity come principally from passengers and mails.

It must be confessed that the competition of the Germans has finally touched the British ship manager, but we wished a hundred times a day that it might affect him more. It must have been a fearful day when he realized that it was desirable to provide music, as the Germans do. Other concessions are the veranda and a children's room with cheerful pictures and nursery rhymes on the walls. But the haughty officials (with notable exceptions) still look upon us as poor things to be carefully kept in our places. On a modern German liner you are treated as a welcome guest and finally set ashore after a cheerful captain's dinner and possibly a general illumination and a dance on deck. A Cunard captain would die first. Perhaps the most human soul in the employ of the company is the barber. If you have been snubbed, you can always go to his cabin and buy a trifling souvenir and get a kind word. If, in a big ship like this, were carried a score or two of barbers, the atmosphere would be almost genial.

But the conservatism of it all has its good points — if no charm. There are no surprises, no strange fashions. You might be tempted to ask to see the vacant suites of rooms for which the solitary rich pay from $1,000 to $2,000 for a single passage, but you had better wait until you are safely landed. Then, upon a suitable occasion, you may pay fifty cents (devoted to charity), take your place at the end of a long line, and gape wonderingly at the accommodations for the wealthy.

THE AFTER-BRIDGE OF THE "MAURETANIA"

TO QUEENSTOWN IN FIVE DAYS

The real story of the journey and the only one worth the telling can be compressed into this statement: the *Lusitania* left Sandy Hook on Saturday evening at a little before six, and on Thursday night we slept at Queenstown. No one ever did this before since the world began, and it is something to have been at the doing of a thing for the first time. On two days, also, the ship made 570 knots in a twenty-three hour day, going east — inspiring records

at the time of making, but even before these words are printed they will probably be surpassed.

After the usual run of "bromidic" subjects, such as the weather, the miles run, the number of voyages made, there comes the eternal question of vibration: Does the *Lusitania* show more vibration than this or that other great greyhound? And there seems to be no real answer to the question; what is the spasm of motion to one is a gentle tremor to another. For myself, I conclude that any motion which does not shatter the tall tower of a blanc-mange on the dining-table is well within reason. The vibration of turbine engines may be like every other kind, but the sensations given by the quadruple screw are surely different and pleasanter. It is the change in rhythm from the two-cylinder motor car to the four-cylinder — a smoother, humming motion. It takes a great and peculiar sidelong sea to throw even one of the screws from the water with the desperate shake which commonly follows such mechanical spasms.

ONE OF THE "MAURETANIA'S" ROYAL SUITES

THE "MAURETANIA'S" FIRST TRIP

There are well-defined drawbacks to participating in the joys of "maiden" voyages. It is all very delightful to watch the crowd of 50,000 people standing in the rain at eight o'clock at night, cheering the new ship on her way. It is exhilarating, too, to sail into the harbor of New York and be welcomed by tugs and steamers; but in mid-ocean, with no applauding multitudes, it is marvelous how quickly the passenger descends to the small affairs of ocean housekeeping. The eternal questions of food and service and ventilation, with small gossip, occupy your time. The real and absorbing question on shipboard is, "Are you sick?" Broadly speaking, the bigger the vessel, the better chance you have for es-

caping from that distressing condition. Therefore, on these two great steamers, each as long as four ordinary New York "blocks," the chance of comfort at sea is greatest. But even on these there is a qualification. The faster the ship, the more tense the strain of the movement which is apt to disturb the nerves that lie somewhere about the belt.

Surely the builders of the ship had done their utmost to see that every department ran smoothly, but the ocean itself is a law above all plans and purposes. Twelve specialists came aboard with us at Liverpool to keep the ship "tuned up," but a rough and pitching sea caused them to disappear as mist before the sun. The elevator expert, the man who understands the complicated ventilating appliances, the worshipful plumber, and all the rest, were not to be found. The elevators stopped, the ventilators baulked, and the experts could not do more than raise their hands to their heads; even the elevator boys were sick. These experiences are probably unavoidable on a first and stormy journey.

And so the maiden trip seemed likely to prove more like a training journey. All was at first dull, stale, and unprofitable — no big runs, no exhilarating news in the paper published daily, and no records to gossip about. But a wonderful transformation came on Thursday. About noon the rumor ran about that we had gone more than 600 knots. The secret information put it at 621—a new record; and we felt a thrill when 624 was announced, for this is faster than any other ship had ever steamed for twenty-four hours. Every one was cheered and comforted. We began to receive and to send marconigrams to the neighboring steamers, a few hundred miles from us, and the world again became interesting and important.

A SECOND CABIN ON THE "MAURETANIA"

Surely the English are the most self-possessed

people in the world. The builders and the officers of the ship seemed to be the least interested of us all. They possessed a sure confidence which was not to be affected by temporary triumphs or reverses. One day we were standing with the chairman of the company that built the ship, who was responsible for her engines, her fittings, and her speed subsidy. Seven million and a half dollars had been spent upon her. She was laboring in great seas, the strain was terrific, and a newspaper man noticed that the ship had stopped while the captain and the seamen under his direction renewed the fastenings—the captain going first on the deck, for he would send no man where he would not go himself.

And so the *Mauretania's* first voyage ended safely, still untried as to her full speed. On Friday morning we came to an ignominious stop at Sandy Hook in a dense fog, but an early start from Liverpool on Saturday will some day land passengers in New York on Thursday night. A turbine with four screws

THE "MAURETANIA'S" SMOKING-ROOM

stopped. The builder looked calmly out upon the water, but showed no special interest. The newspaper man persisted in his demand to know why the engines were shut down, but the builder would only say: "I am not worrying; you may be sure the ship's all right. I know her." More questions were required to induce him to go to the bridge, where he learned that the lashings of the spare anchor had loosened. No man could live on the upper deck when the ship was driving through the storm. The engines had, therefore, been needs as much "tuning" as a reciprocating engine (so the authorities tell us), newspaper talk to the contrary.

The machinery on these first trips is watched by the engineers with minute care; no opportunity is lost to find the flaws, by study instead of by accident. It is indeed a marvelous thing that a vessel full of a thousand small engines and complicated contrivances can start off practically new with so little friction; and no man can tell what she will do when the ship finds herself.

THE REMEDY FOR OUR CURRENCY ILLS

FINANCIAL LEGISLATION IMPERATIVE—A HIGHLY-TAXED EMERGENCY CIRCULATION IS THE BEST PLAN

BY

SERENO S. PRATT

EDITOR-IN-CHIEF OF THE "WALL STREET JOURNAL"

STANDING in the Chamber of Commerce two years ago, Mr. Jacob H. Schiff declared that unless there were currency reform there would be in this country "a panic compared with which all other panics would seem as child's play."

In 1905, addressing a convention of Ohio bankers, Mr. Leslie M. Shaw, then Secretary of the Treasury, said that there would be no currency reform in this country until there had been a panic resulting from the lack of it.

Mr. Schiff's prediction has come true. A panic, in some of its aspects unparalleled in financial history, has swept over the country. It provides just the experience—just the object lesson—which Secretary Shaw held to be necessary before financial legislation providing for elasticity in the money circulation could be had. The question is: having had the panic, will we now obtain the financial legislation?

Back of all this is still another question which needs to be considered: Is it possible to prevent panics by any legislation?

The House of Representatives, through its Committee on Banking and Currency, in reporting the Fowler credit currency bill answers the question in the affirmative. It claims that such a law "would almost invariably prevent any panic whatever and would always avert a ruinous crisis."

Secretary Shaw, in his last annual report to Congress, argued that if the Secretary of the Treasury were provided with a surplus of $100,000,000 he would be able to prevent any financial panic in any part of the world.

These are stupendous claims; and, coming from such high authorities, they must be treated with respect. If it be true that panics can be prevented by legislation, then it would be colossal folly on the part of the American people to delay an instant in enacting the necessary preventive legislation. It has been stated that the panic of 1907 has already been more costly to the United States, in its depreciation of securities, in its reduction of business activity, in its loss of earning power, and in its throwing of countless workmen out of employment, than was the American Civil War. Shylock said: "You take my life when you take the prop that doth sustain my life." And the "prop" that sustains as many lives as made the supreme sacrifice of patriotism on the battlefields of the South has been removed by the panic of 1907.

While earnestly in favor of currency legislation, I don't believe that it is possible to prevent panics by legislation, any more than wars can be prevented by international peace congresses. Panics are a development of modern civilization. They have occurred at pretty nearly regular intervals during the last two hundred years. They seem to be an inevitable evil of the great system of credit, which Daniel Webster once said was "the vital air of commerce."

Agricultural depression may produce panics, and there is no way under heaven whereby crop failures may be prevented. No legislation can control the action of the sun or the movement of the winds. And, as a matter of fact, one of the greatest of English economists associated panics with sun-spots. But, while crop failures cannot be prevented, scientific methods of agriculture, such as are being introduced, greatly diminish the chances of crop failures.

Terrible disasters, such as the San Francisco earthquake and fire, for instance, may produce panics; and, in fact, the panic of 1907 may fairly be said to have had as its starting point the San Francisco catastrophe in April of 1906. But, while it is impossible to prevent fires, it is possible by scientific methods of fireproof

construction to diminish the chances and limit the area of conflagrations.

It is impossible to prevent that speculation and inflation which are the parents of financial upheavals, yet it is possible by scientific methods of currency to diminish the opportunities and lessen the evil effects of such developments.

This fact in itself is a sufficient reason for immediate financial legislation in the direction of a larger degree of elasticity in our currency system, without maintaining the bigger claim that it is possible to prevent panics.

THE COUNTRY HAS MONEY ENOUGH

In every time of money-market stringency a loud cry comes up from certain classes and certain sections of the country for more money —but it isn't more money that we need. This country has all the money that it requires. In fact, it has more than any other nation on earth. It has more gold than even France. It has more gold than Great Britain and Russia put together. It has more silver than even India. It has nearly as much as France and China put together. It has also more paper-money than any other first-class country, and it has more than Argentina and Brazil put together. Its per capita circulation is larger than that of any other important country in the world, with the exception of France, and in France the check system is only partially developed. Indeed, it is a question whether the United States has not too much money, and it is a complaint of European critics that we absorb too large a portion of the world's gold.

Not only have we plenty of money, but our monetary system is sound, having at its base a tremendous reserve of gold, amounting to 43 per cent. of the total amount of the circulation. The only defect of our money system is that it is inelastic. It expands rapidly enough, but it has no ready power of contraction. There is no provision made for extraordinary emergencies. The only true elasticity that exists is in what is called "the deposit currency" of the country—that is to say, its check currency—and this fortunately performs the vast bulk of the business of the country.

While only a small percentage of the business is carried on by means of actual money passing from hand to hand, yet this small percentage requires the use of more actual money than is held by the banks as reserve against this deposit currency, performing, as it does, the great bulk of the commercial exchanges. One dollar in a bank has the power of ten dollars in effecting exchanges. One dollar passing from buyer to seller in retail trade has exactly the power of one dollar. In 1906, 57 per cent. of all the money in the country was in circulation outside of the Treasury and the banks.

Wonderful as has been the expansion of our check system, there can be no doubt that the American people carry too much actual money in their pockets and do too large a percentage of their business with it. The volume of check money adjusts itself perfectly to the varying needs of the country, or would do so were it not for the varying demands made for currency in what may be termed the retail transactions. These varying demands spring from two causes. First the regular periods of harvesting and moving the crops, a process which requires an unusual quantity of actual money, at least $200,000,000 every fall; and, second, the rare periods when that lack of confidence which we call "panic" leads people to run to the banks to withdraw their deposits in actual money in order that they may hoard it away in safe-deposit vaults.

AN EMERGENCY CIRCULATION

To meet these two needs, it is proposed to make provision for an issuance of bank money which should be in the nature of an extension of the check or credit system—money that would remain in circulation only so long as the emergency which called it forth existed, and then be quickly retired.

The retirement is as necessary as the issuance, for there is as great a danger in too much money as there is in too little. It is as important to prevent inflation as it is to prevent panic. That is exactly the defect in the American system, that it provides, although imperfectly, for extension, yet has no adequate power of contraction.

Now this is where we are at a disadvantage as compared with the other great civilized nations. Of course, these other countries have their periods of financial crisis and commercial depression just as we do. England, France, Germany, and Russia have their great central banks and yet they suffer at times from sudden trade contraction and speculative flurry. Germany has an excellent system of

emergency circulation, which it is desired that this country shall copy, and yet Germany has only recently passed through a period of severe business depression. This, however, is no argument against a central bank or a credit currency. It simply proves that no system can be devised that will prove an absolute protection against every financial ill. Anyone who offers a currency plan under any such pretense is simply a quack, advertising a new patent medicine to cure every disease.

But while England, France, and Germany have their periods of financial crises and business depressions, yet these are by no means so violent in their operation as the American panics, which are simply terrifying in their effects. Moreover, the English, French, and German systems result in a more equitable and stable condition of the money market. If it will be remembered that interest is the price of credit and is in the nature of a tax upon commerce, a stable rate of interest is seen to be of the highest importance. In fact, a stable rate is more important than a low rate. Widely fluctuating rates of interest are a severe wrench upon business. Mr. Jacob H. Schiff, in the speech already referred to, declared that money-market conditions in the United States were a "disgrace to the country," and his language was by no means too strong.

Recently the Bank of England advanced its rate of discount to 7 per cent. and the whole world was astonished, for this institution has not charged such a rate before in thirty-four years. The Bank of Berlin at the same time increased its rate to 7½ per cent., a most unusual rate for Germany. The fluctuations in interest in these countries are upon an exceedingly narrow scale. In France the rate is even more stable.

EXORBITANT RATES FOR CALL-MONEY

But note how it is in New York. In 1904 the call-money rates were for four months as low as ½ of 1 per cent., the highest rate for that year having been 6 per cent. In 1905 the rate was 1½ per cent. in September, and 125 per cent. in December. In 1906 the call-money rate fluctuated from 60 to 2 per cent. In five different months of that year there was as wide a fluctuation of rates as from 3 to 60, from 2 to 30, from 2 to 40, from 2 to 36, and from 2½ to 27. In 1907 the rate fluctuated from 1 to 125 per cent. These Stock Exchange rates affect the money conditions of the whole country.

Now it would be foolish to deny that these extraordinary and demoralizing conditions would be vastly bettered if there were improved methods of banking in this country This is a branch of the subject which I do not propose to touch upon, inasmuch as THE WORLD'S WORK has already covered it in articles of conspicuous merit. If the bankers would devise better means of coöperation, if they would remove the evil of the excessive competition for deposits that leads to the payment of excessive rates of interest upon deposits, if they would not lend themselves to schemes of financial banking and would restrict themselves more to their proper field of facilitating commerce, if they would put a little more elasticity into their reserves so as to provide for the varying demands of the different seasons, if they would take steps to remove the call-money market in New York from the Stock Exchange, if they would get together and publish weekly more comprehensive and comprehensible bank statements — if they would do these and other things which might be mentioned, they would go far toward lessening the disgraceful conditions to which Mr. Schiff made reference.

Indeed, the need of currency reform is less to provide for the needs of crop-moving seasons than it is to provide a system of protection against great and sudden emergencies. We must, however, deal with the situation as it confronts us rather than as it ought to be. It is more difficult to bring about these banking reforms than it is to obtain currency legislation.

BANK NOTES LACK ELASTICITY

One thing more is needed to be said by way of explaining the necessity of some such legislation. We already have a bank-note circulation in this country. It has some admirable features. No one questions the soundness of a bank dollar. No one ever thinks of looking at his money to ascertain whether it was issued by a bank or by the Government. They are equally good. This is because the bank dollar is secured by United States bonds to the full amount of its face, deposited by the bank with the Government, in addition to a 5 per cent. fund for redemption.

But this circulation, while entirely safe, lacks that element of elasticity which is desirable to meet the varying demands of the different seasons, and neither does it provide

adequately for emergencies. It is a system that is anchored to the market for United States bonds. As the report of the American Bankers' Association says: "It does not expand with the need for currency in the crop-moving period, causing stringency, nor contract when the uses for currency are less extensive, causing redundancy. Experience has shown that it actually expands the more rapidly when money is really less needed and contracts most easily when money is most needed. Its expansion depends upon the purchase of bonds at a price that would make the basing of currency thereon profitable and its contraction is expressly limited."

FINANCIAL LEGISLATION IMPERATIVE

Hence the call for financial legislation which shall remedy this grave defect and make the country more able to cope with danger periods and less subject to violent changes in interest rates. As usual, following a panic such as we have experienced, the land is flooded with various schemes of currency reform. These range all the way from the rankest propositions of inflation to the highest scientific conceptions of money and credit. I propose to select out of these many propositions a few which have the strongest backing and which receive the widest consideration. I propose to explain them briefly, but in as plain and untechnical language as possible, for the guidance of people who have not read deeply the literature of this subject. I approach it, I am frank to say, with strong leanings toward some provision for emergency money rather than for the establishment of what its advocates are pleased to call "scientific credit currency." I shall endeavor, however, fairly to present all sides of the question.

The American Bankers' Association, at its last convention, adopted a report on the subject, though not with unanimity, and it is to be noted that the bankers' associations in several Western states have not ratified the action of the American Association. The New York Chamber of Commerce has also presented two or three reports on the question. The Banking and Currency Committee of the House of Representatives has in successive years made reports in regard to the question, and its chairman, Mr. Fowler, is one of the most conspicuous advocates of asset currency in the United States.

The recent Secretaries of the Treasury and Comptrollers of the Currency have also written and spoken a great deal in regard to the issue. Ex-Secretary Gage is an aggressive advocate of asset currency. Ex-Secretary Shaw is a firm advocate of an emergency circulation. Secretary Cortelyou, at the time this was written, had not stated his position. One of the very best expositions of the asset currency plan may be found in the annual report for 1906 of the Comptroller of the Currency, Mr. Ridgely. United States Treasurer Treat has proposed a plan which has met with considerable favor for an emergency currency, not based upon bank assets but secured by state and municipal bonds, the present bank-note circulation being secured by United States bonds.

There is a large number of bankers and theoretical students of the subject who favor the establishment of a great central bank in this country, which should be a bank of ultimate reserve and of note issue. Among the most conspicuous advocates of these are Ex-Secretary Shaw, Vice-President Vanderlip of the National City Bank; President Roberts of the Commercial National Bank of Chicago, formerly director of the mint, and Mr. A. J. Frame of Wisconsin, who, while favoring a central bank, is the most aggressive opponent of the bankers' plan of asset currency that there is in the country. The Chamber of Commerce has also, in a report, advocated a central bank but has admitted that the political temper of the people is opposed to such financial concentration, and ex-Secretary Shaw also admits that it is probably impossible of accomplishment. President Roosevelt, in his message of December, 1906, said that there is need of a change but "that many of the proposed changes must be ruled from consideration because they are complicated, are not easy of comprehension, and tend to disturb existing rights and interests."

THE ASSET CURRENCY PLAN

First, let us treat of asset currency. This may be defined as issues of notes secured by the assets of the issuing banks. The cardinal principle of asset currency is that a bank-note is of the same nature as a cashier's check. Mr. A. P. Hepburn defines a bank-note as a demand obligation in principle, and in practical effect essentially the same as a bank deposit.

A credit or asset currency would, therefore,

be merely an extension of our present deposit currency, with which everybody is familiar and which nearly everybody having a substantial income uses. There is hardly anybody that would not accept a check signed by a bank cashier upon his own bank, provided the bank were solvent. Indeed, during the panic of 1907, as during the panic of 1893, when currency was scarce, owing to hoarding, cashiers' checks were extensively issued and used as money. Nearly all of the emergency money of panics, such as clearing-house certificates, pay checks, and the like, are examples of asset currency. It would make no difference to a bank whether it issued a bank-note or granted an open credit upon its books which could be drawn upon by check. Both are demand liabilities and must be redeemed in lawful money when required. While every advocate of credit currency makes substantantially this definition of its nature, claiming that the bank-note is the same as the check currency, Mr. Frame of Wisconsin, in his argument before the American Bankers' Association against the bankers' plan, "challenged any man to prove that a bank-note is essentially the same in principle as a deposit payable on demand." In my opinion the analogy is correct. Theoretically the asset currency idea is perfect. It is only when it is proposed to apply it practically that insurmountable difficulties appear.

THE OBJECTIONS TO ASSET CURRENCY

The establishment of a credit-note system would have to meet the fact that our present note circulation is based upon United States bonds. To disestablish the bond-secured circulation for an asset currency would amount to such a revolution and cause such damage to existing interests as to be practically impossible. The great bulk of the national banks of the United States are owners of United States bonds. These bonds were bought at high prices for the purpose of circulation. If they were not used for circulation, the prices of the bonds would decline and the banks would be involved in immense losses. Moreover, the banks are the best — in fact, now practically the only — customers of the United States when it enters into the market with a new loan; and it is for the interest of the United States to maintain its bond-secured circulation in order to have such a market for its bonds that it can issue them at a premium and yet at the lowest rate of interest of any Government in the world.

Hence the advocates of asset currency propose a credit currency scheme which shall be additional to the present bond-secured circulation. For instance, the commission appointed by the American Bankers' Association provided that a national bank should have the right to issue credit notes to the amount of 40 per cent. of its bond-secured circulation, subject to a tax of 2½ per cent. per annum and a further amount equal to 12½ per cent. of its capital subject to a tax of 5 per cent., provided that reserves should be carried against credit notes of the same amount as are now required against deposits.

The Fowler plan, reported from the Committee on Banking and Currency in December, 1906, advocated substantially this plan except that it made the tax upon the 40 per cent. issue 3 per cent. instead of 2½. This would have provided for an issue of about $200,000,000 of credit notes taxed at 3 per cent. and of about $100,000,000 of credit-notes taxed at 5 per cent., an aggregate issue of about $300,000,000. It is the opinion of ex-Secretary Shaw that any emergency scheme ought to provide for a possible issue of $400,000,000.

That asset currency is a practical scheme under certain conditions is proved by the fact that it is in operation in Canada and in Scotland, and works admirably in both countries. But Canada, while wide in extent, is small in population, and Scotland is both small in area and in population, and the conditions in both countries are quite different from those in the United States.

The Canadian banks of issue are only 35 in number, though possessing numerous branches, and an issue of credit notes by 35 banks is quite different from an issue by 6,000 banks.

A good many bankers, ex-Secretary Shaw among them, think that the issue by 6,000 banks of low-taxed credit notes would in this country amount substantially to an inflation of the currency. Mr. Frame declares that it is impossible to show that the methods of redemption proposed, which the asset currency advocates claim is the crucial test of success or failure, offers any practical assurance that it will work under our banking system. He is supported on this point by Congressman Hill, of Connecticut, who argues that the "fatal obstacle in the way of a sound, safe,

effective method of redemption under the asset currency system in this country is the fact that we have 6,000 independent national banks, each one looking out for its own welfare with no community of interest whatever."

Moreover, it may be asked whether the American people would take kindly to a scheme which would enable the banks, by paying 2½ or 3 per cent. interest, to issue money which can be loaned out at 4, 5, or 6 per cent., as the case may be. If the notes were guaranteed by the Government, they would be accepted as money and people would not be eager to send them in for redemption. If they were guaranteed by the Government and the Government had a first lien upon the assets of the bank in order to provide for their payment, what would the depositors in these banks say to the idea of having only a second lien upon the assets?

THE EMERGENCY CIRCULATION PLAN

Second, emergency circulation. This may be defined as an issue of notes either by the Government or by the banks or by the clearing-houses to serve as emergency money. Such notes might be fiat or credit-notes, but would be so highly taxed that it would be unprofitable for the issuing banks or clearing-houses to keep them in circulation any longer than the rates of interest justified. For instance, if the notes were taxed 5 per cent., they would become unprofitable the moment that rates of interest fell to 5 per cent. or under. In fact, they probably would not be profitable if interest fell below 6 per cent. The moment that interest fell to a point where the circulation was no longer profitable, the issuing bank would immediately deposit lawful money with the Government to cover their entire redemption. That would contract the circulation at once, thus preventing redundancy. It would contract it as effectively as if all of the holders of the notes had presented them for redemption at once.

All the great countries have arrangements providing for emergency circulation. For instance, England's bank act of 1844 has been suspended three times in order to enable the bank to issue notes without reference to its gold deposits, and the mere fact that there is this potential power of suspending the bank act in order to do this very thing operates often to prevent the very emergency which would justify it.

Germany has a system of emergency circulation toward which the thoughts of American writers on the subject are very much directed. The Reichsbank has the power under the German law to issue notes subject to a tax of 5 per cent. per annum on a circulation in excess of its cash means. The Bank of France also has provision for the circulation of uncovered notes.

Emergency circulation, in order to be effective — certainly in the United States — ought to provide that the notes are of the same appearance and kind as notes otherwise secured. One of the evils of clearing-house certificates, which are a kind of emergency circulation, is that they are an advertisement of the very evil which they are issued to prevent. They therefore cause alarm. In order to obviate this it would be necessary to make sure that the emergency notes were not a new kind of money but simply an additional quantity of an old kind. Ex-Secretary Shaw is perhaps the most conspicuous advocate of an emergency circulation, and his measure provides for an issue of an adequate quantity of emergency notes by the banks, limited by their capital, and taxed at least 5 per cent.

My own idea is that the best emergency circulation could be obtained in this way: Let the Government consolidate its issues of gold certificates and greenbacks. Then let it buy a sufficient quantity of additional gold, so that the combined certificates and greenbacks, by whatever name they might be called, would have a dollar of gold in the Treasury as against a dollar of notes. We would then have as perfect a gold currency as the world contains. Then let the Secretary of the Treasury be given the power to issue, say, two or three hundred million dollars additional of these notes, without further security. Then the reserve against the notes would be reduced from 100 to, say, 80 or 85. The Treasury could loan the additional notes to the banks at 5 or 6 per cent., and it is needless to say that they would redeem them as quickly as the emergency which called them forth expired, when the circulation would return to its former normal point. It is probable that such a scheme could not be established unless the President of the United States made it a determined matter of administration policy. We shall have to accept what is practical, politically and otherwise, rather than what might be ideal.

Another emergency measure is that proposed by United States Treasurer Treat. Mr. Treat proposes that not less than 50 per cent. of the bank-note circulation shall be secured by United States bonds, but that any part of the remainder of the permissible circulation might be secured by bonds acceptable by the Government as security for its loans to banks known as public deposits: in other words, that a part of the bank-note might be secured by state and municipal bonds. He would provide that the issue of such emergency notes shall be a fac-simile of the present national bank notes. Mr. Treat advocates a retirement of these notes, not by a high tax nor by elaborate redemption agencies, but by a fixed time limit.

I have not attempted to state this or the other plans in great detail, but simply to give an idea of the principles which underlie them. Of course, the advocates of credit currency are up in arms against any such scheme as this, holding that a bond-secured circulation of any kind is unscientific and barbarous, and that an issue of notes secured in any other way than by the bonds of the United States would be open to the possibility of widespread and gross abuses. There are, however, advocates of emergency circulation who go much further than Mr. Treat and would permit the issue of notes upon any such bonds as the savings banks of New York and Massachusetts are permitted to invest in. In this connection it is of interest to note the statement made by Congressman A. J. Warner during the panic of 1893. He said that the experiences of that panic showed that what was needed was some effective means by which the securities of the country could be converted quickly into currency.

THE CENTRAL BANK PLAN

Third, the central bank. Every great country has such an institution as this, with the exception of the United States, and it is undoubtedly true that the business of these countries is immensely benefited by these institutions. The great banks of England, France, and Germany have repeatedly exercised their power over international finance for the security of the commerce of the nations. In the language of the Chamber of Commerce report, adopted in November 1906, "a central bank in times of stress or emergency would be able by regulation of its note issues to prevent those sudden and great fluctuations in rates of interest which in the past have proved so disastrous. Furthermore, it would have the power to curb dangerous disasters of speculation and undue expansion, for by the control of its rate of interest and its issue of notes it would be able to exert great influence upon the money market and upon public opinion. Under our present system of independent banks there is no centralization of financial responsibility, so that in times of dangerous over-expansion no united effort can be made to impose a check which will prevent reaction and depression." A central bank could not only provide protection in time of panic but could also, by wise management, do much to avert such catastrophes.

A NATIONAL BANK OF BANKS

Opponents of an issue of credit notes by 6,000 independent banks would generally be in favor of an issue of credit notes by a great central bank which would be the depository of the ultimate reserve of the country. For instance, Mr. Frame, who is a determined opponent of the Fowler and the bankers' plans of asset currency, is a strong advocate of the central bank. Mr. Frame, President Roberts of the Commercial Bank of Chicago, and Congressman Hill of Connecticut advocate the creation of a central bank upon practically similar lines. With immaterial variations, their idea is for the creation of a great bank which would serve as a sort of bank for banks, the capital to be subscribed by the national banks, in which every section of the country would be represented by the election of one or two directors from each state; thus the board of directors would be like the Senate of the United States and would have practically the same power over the finances of the country that the Senate has over its political affairs.

While a central bank would be an ideal solution of this whole problem, yet it would seem to be practically impossible to get the people of the United States to adopt it. Their present temper is opposed to financial concentration, and unless the central bank were entirely a Government affair — which would be substantially the same as making the Treasury Department the head of the banking system, which indeed it almost is to-day — such an institution would represent private capital and would be largely controlled by private individuals, although the Government

might be represented in its board of directors. The great fear would be that such an institution would fall into the control of one or another of the big financial groups of the country. For instance, the Morgan group would insist upon being represented in it; the Standard Oil group would want a representative in it; the Harriman group would want a representative in it, and so on. And perhaps one or another of these powers would be able to secure predominance in its management.

The most serious question that can be raised in regard to a central bank is whether we possess the financial ability to manage such an institution. Financial ability we have in abundance, but what would be needed is great financial ability independent of private interests and speculative enterprises. If we have not such ability now, such an institution would quickly develop it.

One of the first things that Alexander Hamilton did for the United States of America was to establish a central bank. One of the most unfortunate events in American history was the destruction of the second United States bank by Andrew Jackson, who admitted that he was opposed to all banks, having become prejudiced against them by reading the history of the South Sea Bubble. And much of the prejudice felt by Jackson and transmitted by him to a great party in this country still remains. Whether or not it can be overcome is a question for the future to answer.

In conclusion, let me urge that something be done immediately in the way of providing for an issue of currency for use in financial emergencies, not in the expectation that it will always prevent panic or business depression but that it will be ordinarily a breakwater against disaster and will provide for a larger degree of stability in interest rates. The thing to do is to take advantage of the recent panic, with its impressive object-lesson of the need of such an emergency circulation, and get together. Any legislation that can be secured on this subject must be in the nature of a compromise. That compromise will be along the line of least resistance. The line of least resistance lies in the creation of a possible note issue which shall be in harmony with our present system and which will satisfy the people that it is not a creation primarily for the profit of issuing banks, but for the protection of the country.

The larger and more scientific reform might be left for a commission of experts to investigate and report on. Properly conducted, such an investigation would, it is likely, make the most important contribution to constructive finance in half a century.

BREEDING BETTER MEN

THE NEW SCIENCE OF EUGENICS WHICH WOULD ELEVATE THE RACE BY PRODUCING HIGHER TYPES

BY

RAYMOND PEARL,

BIOLOGIST OF THE MAINE AGRICULTURAL EXPERIMENT STATION

THE actual creation of new and better types of plants and animals has become almost a matter of everyday occurrence. Indeed, the time is rapidly approaching when it will be possible for a person to give an order to a breeder specifying that he would like to have a plant or an animal embodying such and such characteristics, and, after a due lapse of time, to receive from the breeder precisely what he ordered, just as though he were dealing with a manufacturing machinist. Now, while this possibility, even at present in sight of complete realization, represents a truly wonderful advance in man's ability to control nature, yet it leaves practically untouched what is after all the greatest problem of applied biology. For it is certainly clear that, from the human standpoint, whether individual or social, nothing compares in importance with the amelioration of man himself.

If we consider that social movement which we commonly call "the advance of civilization," we see that society, acting principally through both Church and State, has continuously endeavored to make man better. But this endeavor has mainly taken two directions: one through the improvement of the external

conditions of human existence, including the combating of the various things which cause disease; the other through education in the broadest sense, including moral education from the Church. It is obvious that the progress in both directions has been enormous. Clearly, however, both these lines of endeavor, successful as they have been in their respective fields, have not touched one possibility for the amelioration of the human species. They have had to do, on the one hand with man's environment, and on the other hand with his development and life after birth, and have nothing directly or effectively to do with his character or quality *at* birth. In other words, the case has been very similar to earlier agricultural practice, where almost the entire attention was given to the cultivation of crops, their fertilizing, the tillage of the soil, and the like; and little or no attention was given to the procuring of better seed on which to practice improved cultivation. But agriculture is now passing beyond this stage; the breeding of better varieties of plants and animals is now universally recognized as the direction in which the greatest agricultural advance of the future is likely to come.

But if this be a good way in which to improve animals and plants in general, is it not worth considering in connection with the problem of the betterment of the human race? A firm conviction that in this idea lies so much promise of future advance in the welfare of nations and that a thorough-going scientific investigation of the problem of human breeding in the widest sense is imperatively demanded, led to the new science of eugenics.

A SCIENCE OF HUMAN BREEDING

What, then, is the "science of eugenics," who are its workers, and what has it accomplished? We may best define it by paraphrasing the definition given by its founder, Mr. Francis Galton. Eugenics is the science which deals with all influences that improve the inborn qualities of a race, also with those that develop them to the utmost advantage; and it embodies the study of agencies under social control that may improve or impair the racial qualities of future generations. The primary and immediate aim of the science is thoroughly to investigate:

(1) The laws of variation, and particularly of inheritance, of physical and psychical characters and of the various specific diseases and general morbid conditions to which man is subject, in order that it may be known to what extent these various characters are inborn.

(2) The relative fecundity and fertility of the various racial and social classes, and the correlation or association of fecundity and fertility with different characteristics, in order that we may know to what relative extent the good, bad, and indifferent elements of society reproduce themselves.

(3) The effect of external influences on the characteristics enumerated under (1) and (2), in order that definite knowledge as to how such social activities as organized charities, for example, may most effectively be directed toward a eugenic end.

A parallel aim is to endeavor to influence public opinion toward eugenic ideals, particularly with reference to marriage, the bearing and rearing of children, and to the care and treatment of defective classes of society; using as the basis for the propaganda the solid contributions to knowledge which may be gained in the campaign of research outlined.

As has been said, the eugenics movement owes its origin to Francis Galton. It was formally inaugurated, and the science received its name, in a paper read by Mr. Galton before the Sociological Society of London early in 1904. But while the formal inauguration of the movement dates from this time, a solid foundation for it had been laid by earlier work, particularly that of Mr. Galton on inheritance, embodied in his widely read "Hereditary Genius" and "Natural Inheritance"; and that of Professor Karl Pearson in mathematical biology, or "biometry." To the genius of Professor Pearson the science of eugenics is indebted for that development of refined methods of statistical analysis which may fairly be said to have been the *sine qua non* of all that eugenics has so far accomplished. In 1905 Mr. Galton gave to the University of London a sum of money for the purpose of establishing work in eugenics as a part of research activity of the University. A "Francis Galton Research Fellowship in Natural Eugenics" was founded and a Fellow appointed. Recently an addition to the endowment has been made by Mr. Galton, and at present the work is a regular department of the University, carried on under the direction of Professor Pearson by a corps of assistants.

In considering the results which have so far been obtained by workers in eugenics, we may best take up in order some of the most important specific questions to which they have obtained definite answers.

The first of these questions is: Are the physical characters of man inherited, and, if so, with what intensity in the different degrees of relationship? To answer this question it is obviously necessary to measure precisely in a large number of individuals of certain degrees of relationship a series of definite physical characters, and then to get an expression of the degree to which a given characteristic in sons, say, is like that characteristic in fathers.

The best expression for this likeness has been found to be a mathematical constant known as the coefficient of correlation. A word will suffice to explain the nature of this constant; it is of such character that if every son in a measured group were precisely like his father in respect to the character measured, the coefficient measuring the resemblance would take the value one. If, on the other hand, the group of sons were no more like their fathers than they were like any group of men in general, the coefficient would take the value of zero. For degrees of resemblance between total absence of likeness and absolute identity, the coefficient will take the appropriate value between zero and one.

To answer the question whether physical characters are inherited in man, Professor Pearson and his head-assistant, Dr. Alice Lee, collected an extensive series of data from middle-class English families. The data included measurements of stature, and length of the forearm and span, taken for the following relations in about one thousand families: father, mother, adult sons, adult daughters. These investigators also obtained data on the color of the eyes for individuals of the same degrees of kinship. The general character of the results of the analysis of these is as follows:

CHARACTER	RELATIVES	INTENSITY OF RESEMBLANCE AS MEASURED BY THE COEFFICIENT OF CORRELATION.
Stature,	Father and son	.51
Span,	" " "	.45
Forearm length,	" " "	.42
Eye color,	" " "	.55
Stature,	Mother and daughter	.51
Span,	" " "	.45
Forearm length,	" " "	.42

From these results there can be but one conclusion. It is that the characters measured are definitely inherited and to a sensible degree. The resemblance between parent and offspring is on the average about one-half as close as complete identity. A similar result is reached if we examine other kinds of relationship. Thus, if the degree of resemblance between brothers be measured, the following results are obtained:

CHARACTER	RELATIVES	INTENSITY OF RESEMBLANCE
Stature,	Adult brothers	.51
Span,	" "	.55
Forearm length,	" "	.49
Eye color,	" "	.52
Head length,	Minor brothers (12 years old)	.50
" breadth,	" "	.59
" height,	" "	.55

We see that again a very definite degree of hereditary resemblance is shown. The same thing would appear if we dealt with comparable statistics for sisters. An interesting point further comes out of these tables. If we take the average of the intensities of parental resemblance in the first table, we find it to be .47. The average intensity of the resemblance between brothers from the second table is .53 — larger than the former. We should get the same result if we took more extensive data, and it leads to one of the well-grounded conclusions of eugenics work — that the hereditary resemblance between brothers and sisters is, on the average, closer than that between parent and offspring.

The hereditary resemblance between an individual and his more remote ancestors, in respect to physical characters, has been measured in the same way. The general result of such studies has been to lead to the formulation of a definite law of inheritance, the so-called law of "ancestral inheritance." This may be expressed as follows: An individual inherits in some degree from every one of his ancestors, however remote; but the degree of intensity of this inheritance diminishes very rapidly (in geometrical progression) as we pass to more remote ancestors. This law of inheritance has now been shown to hold not only for man, but for a number of lower organisms. It was first formulated by Mr. Francis Galton.

Having settled the question that the physical characters of men are inherited, the next problem obviously is: Are mental and moral qualities likewise inherited, and if so with what degree of intensity? In order to get an answer to this problem Professor Pearson spent several years in the collection and reduction of data on the degree of resemblance between brothers

and sisters in respect to a whole series of psychical characters. These characters included such things as "ability," "temper" "vivacity," "assertiveness," "conscientiousness," and other similar attributes.

The first work was with school-children, the records being made by teachers. It might appear at first thought that such characters could not be treated metrically because no one of them can be measured in the individual with absolute accuracy. But such is far from being the case. Developments of higher statistical theory make it possible to treat data of this kind with quantitative precision. Without going into details regarding this investigation, its general results may be stated as follows: The coefficients measuring the resemblance between brothers and sisters in respect to eight psychical characteristics studied were found to take values substantially identical with those found for the coefficients measuring the resemblance between the same individuals in regard to a series of physical characters. In other words, the evidence indicates that mental and moral characters are inherited, and with about the same degree of intensity as physical characters. Recently another investigator, Mr. Schuster, has shown from a study of Oxford class-lists that the degree of resemblance between father and son, and between adult brothers, in intellectual ability as measured by university scholarship is substantially the same as the resemblance in physical characters between such relatives.

THE INHERITANCE OF DISEASE

Are specific diseases and pathological conditions generally inherited, and with what intensity? The workers in eugenics find that some pathological conditions, at least, are inherited, and with about the same intensity as physical, mental, and moral characters are. The following tabular *résumé* indicates what has so far been done in this field:

PATHOLOGICAL CONDITION	COEFFICIENT MEASURING PARENTAL RESEMBLANCE	COEFFICIENT MEASURING FRATERNAL RESEMBLANCE
Deaf-mutism	·54	·73
Insanity	·58	·48
Pulmonary tuberculosis	·50	·48
Average	·54	·56

Altogether. the eugenics work which has been done can fairly be said to have laid the solid foundation of a knowledge of the laws of heredity in man. All the broad categories of human characteristics — normal physical, psychical, and pathological — have been investigated and, to a first approximation, a knowledge has been obtained as to how they are inherited. Such knowledge was the primary, fundamental need of any scientific eugenics movement, and to have attained so much of it as investigators have is a distinct and notable achievement.

A REPRODUCTION OF THE FITTEST

But heredity is not the only phase of eugenics which has been investigated. Knowing definitely how human characteristics are inherited, it is of equal importance to know to what relative extent different classes of society, possessing different assortments and grades of characteristics, reproduce themselves. If physical and mental traits are inherited, it is of prime importance for the welfare of state or nation that those stocks which are on the whole endowed with the best traits should contribute more, many more, individuals to the next generation than should those stocks whose characteristics are on the whole bad. And to say this need raise no quibble over what is "good" or "bad" in human stocks.

All right-minded people will agree that physical vigor and robust health are better in a racial or social group than impotence and liability to disease; or that keen intellects are better for the community than a general average stupidity. It is certainly desirable that the "good" thus broadly qualified should dominate in the nation and race. But, in order to dominate, "good" stocks must be highly fertile. The standpoint of eugenics in this matter was well expressed by Mr. Galton in his first paper on the subject: "The aim of eugenics is to bring as many influences as can be reasonably employed to cause the useful classes in the community to contribute more than their proportion to the next generation."

Now what are the existing conditions relative to the fertility of desirable as compared with undesirable classes? Unfortunately (from the American standpoint) nearly all the data which have so far been critically discussed have come from European peoples. The results of these studies may be condensed from the table on the following page, given by Professor Pearson in a recent lecture before Oxford University.

The conclusion to be drawn from this table is obvious. The average fertility of the pathological stocks is certainly as great as — in fact, somewhat greater than — that of

the normal stocks. The "bad" reproduces itself more liberally than does the "good." Further, there is strong reason to believe that, the majority of the "normal" stocks enumerated in the table are really exceptionally fertile.

FERTILITY IN PATHOLOGICAL STOCKS

CLASS	NATURE OF MARRIAGE	NO. OF CHILDREN
Deaf-mutes, England	(probably completed)	6.2
Deaf-mutes, America	" "	6.1
Tuberculous stock	" "	5.7
Albinatic stock	" "	5.9
Insane stock	" "	6.0
Edinburgh degenerates	(incomplete)	6.1
London mentally defective	"	7.0
Manchester mentally defective	"	6.3
Criminals	(completed)	6.6

FERTILITY IN NORMAL STOCKS

CLASS	NATURE OF MARRIAGE	NO. OF CHILDREN
English middle class	(15 years, at least)	6.4
English family records	(completed)	5.3
English intellectual class	"	4.7
Working class, New South Wales	"	5.3
Danish professional class	(15 years at least)	5.2
Danish working class	(25 years at least)	5.3
Edinburgh normal artisan	(incomplete)	5.9
London normal artisan	"	5.1
Harvard graduates		2.0
English intellectuals		1.5

(Authority for last item, Mr. S. Webb)

Certainly their fertility markedly exceeds that of American college graduates, which has been so much discussed of late, or that of native New England stocks.

THE SURVIVAL OF THE UNFIT

Some may be inclined to say that, granting a greater fertility to pathological or degenerate stocks, the fact means very little, because of the much greater infant mortality among such stocks. According to such a view, it does not specially matter to the nation or race how many degenerates are born, provided the great majority of them die before reaching the age when they can themselves reproduce, or become a menace to society in criminal ways. In other words, this standpoint maintains that while the gross fertility of degenerate stocks may be greater than that of normal stocks, the net fertility is probably less.

But does the great infant mortality in the degenerate classes of society balance or compensate for the great fertility of these classes? It does not. The point has been particularly studied by Mr. David Heron, the present holder of the Francis Galton Fellowship in eugenics, for the population of London. What he found was this: Taking the different registration divisions of the city in order, those districts which have rates of infant mortality above the average also have more than the average number (per hundred wives) of children two to four years of age, children from five to fourteen years of age, and of children aged thirteen to fifteen. In other words, there is a positive correlation or association in the city of London between the infant mortality on the one hand and the number of children who have passed beyond the period of infancy on the other hand. This means that in the districts where the population may be classed as degenerate or approaching that condition, the fertility is great enough not only to furnish material for the tremendous infant mortality but also to have remaining a surplus of children more than two years old, which surplus stands above the average for the number of such children in the different districts.

That the classes of society less worthy from the standpoint of national efficiency contribute an undue share to succeeding generations, has been shown in another way by Mr. Heron in the memoirs alluded to. For the population of London he studied the correlation or association between the birth-rate on the one hand and a series of relations indicative of social status. The general result was to show that in districts where the social status of the population is relatively high, the birth-rate is relatively low, and *vice versa*.

HOW EUGENICS WOULD IMPROVE THE RACE

What has been said will serve in some measure to indicate the sort of work which is being done in the new science of eugenics on the purely research side. It cannot but be evident to anyone who will take the trouble to study carefully the original memoirs which have appeared that at last a solid foundation is being laid for a truly scientific solution of the problem of national and social welfare. The standpoint of eugenics regarding the practical consequences of its scientific deductions cannot be better indicated than through the following paragraph taken from a recent paper by Professor Pearson:

"To-day we feed our criminals up, and we feed up the insane; we let both out of the prison or asylum 'reformed' or 'cured,' as the case may be, only after a few months to return to State supervision, leaving behind them the germs of a new generation of deteriorants. The average number of crimes due to the convicts in His Majesty's prisons to day is ten apiece. We cannot reform the criminal nor cure the insane from the standpoint of heredity; the taint varies not with their moral or mental conduct. These are products of somatic cells; the disease lies deeper in their germinal constitution. Education for the criminal,

fresh air for the tuberculous, rest and food for the neurotic—these are excellent; they may bring control, sound lungs, and sanity to the individual, but they will not save the offspring from the need of like treatment, nor from the danger of collapse when the time of strain comes. They cannot make a nation sound in mind and body; they merely screen a degeneracy behind a throng of arrested degenerates. Our highly developed human sympathy will no longer allow us to watch the State purify itself by aid of crude natural selection. We see pain and suffering only to relieve it, without inquiry as to the moral character of the sufferer or as to his national or racial value. And this is right. No man is responsible for his own being; nature and nurture, over which he had no control, have made him the being he is, good or evil. But here science steps in, crying: 'Let the reprieve be accepted, but next remind the social conscience of its duty to the race. No nation can preserve its efficiency unless dominant fertility be associated with the mentally and physically fitter stocks. The reprieve is granted, but let there be no heritage if you would build up and preserve a virile and efficient people.'"

How can eugenic ideals be made practically effective? Obviously not by any system of compulsion — at least, not for a long time to come. Rather must the process be one of gradual education. As Mr. Galton has pointed out, there are three stages which must be gone through in this process:

First, eugenics must be "made familiar as an academic question"; and, by sheer force of careful, thorough research on its fundamental problems, its importance must be made to be generally understood and accepted.

In the second place, the need for its practical development must be recognized.

Finally, its ideals "must be introduced into the national conscience like a new religion."

While at first thought this may seem to be a formidable programme, it really represents nothing revolutionary, but simply a development along lines already an ingrained part of the public sentiment in every civilized nation. It is no new thing for society to control in some degree the reproduction of its individual members. "Forbidden degrees" of marriage are an example of such control. When men shall come to have as great repugnance to the multiplication of physically or mentally defective individuals as they now have toward incest, one great end of eugenics will have been gained.

As has been indicated, the work in eugenics has thus far largely been done in England. Certain of its problems have reached so acute a stage in that country as to attract the attention of statesmen. "National deterioration" was recently a much discussed topic. A Royal Commission sat with all due circumstance and, it must be confessed, not much to show in the way of results. But it must not for a moment be thought that England has a monopoly on pressing eugenic problems. In this country we have our full measure of such. The physically and mentally defective are with us; one high in authority has told us that the better native stocks in this country are not contributing their proper quota to future generations; and in our immigration problem and race question, for example, we have demands for eugenic research and practice whose urgency needs no emphasis. These last two problems are peculiarly our own, and on that account some discussion of them from the standpoint of eugenics is needed.

The most fundamental problem connected with the enormous influx of foreigners into this country is as to whether they can be "assimilated" into our national life. The discussions of this problem have, for the most part, failed to touch upon the really underlying questions involved. These underlying questions are biological. The immigrant comes into a new physical and biological environment when he comes to this country. How does he react to the environmental change? Is his net fertility increased or diminished? Is his mortality rate, both in general and in respect to particular diseases, increased or diminished? Are his children changed in physical type toward a new "American" type? If so, how many generations are involved in the change? To what extent does he mate within his own stock in successive generations on American soil? What is the relative fertility of matings between foreign and native stocks? These and similar matters seem to be the really fundamental problems of immigration, and they are obviously problems in the field of this new science. The necessity for their answer becomes daily more urgent. At present we have practically no data on them. Yet the collection of extensive and definite statistical data from which these questions could be answered would be a relatively easy matter for a properly organized Government bureau. If anyone is inclined to doubt this, let him look at what the Argentine Republic, whose immigration problem is in

many ways closely similar to ours, has done in this direction.

Again, the race question, while not wholly coming within the field of eugenics, has certain fundamental biological aspects which urgently need investigation from the viewpoint of the new science. Perhaps the most important of these biological problems is in regard to the death-rate of Negroes, both of pure and of mixed blood, in the "black belt" of the South and in the more northern parts of the country. The contention has been frequently made that the crossing of the Negro and the Caucasian races results in progeny physically inferior to the average of either race when pure, the inferiority being manifested chiefly in a lowered capacity to resist disease. It has further been maintained that, if this be a fact, the process of natural selection must in time practically free the country of Negro blood; or, as in the case of the American Indians, cause a great modification of the survivors. Whether there be any foundation for such belief can only be determined by a thorough statistical investigation of the matter, carried out from the eugenic standpoint. Such an investigation should include a study of the fertility of various Negro stocks.

The pressing question is, how the work shall be organized and under what auspices it shall be carried out. It is my belief that the time will come when not only will eugenics form an integral part of the teaching and research work of the great universities, but also will come to be regarded as a legitimate field for the Federal Government. We have now Government bureaus for the study and development of plant and animal breeding; why not one for the study of the problems which have to do with the improvement of human breeds? The establishment of such a bureau only awaits the time when it shall come to be generally recognized that the welfare of the nation demands that attention be paid not alone to improving the external conditions of existence, but equally to maintaining a high standard of inborn quality in the people themselves, and, by so much as may be possible, continually raising this standard.

SOME BOOKS OF REAL VALUE

MR. ANDREW LANG, in his introduction to "Dumas' Memoirs" has expressed with his usual felicity the charm of these records. He says:

"They possess this advantage over most of the books, that the most crabbed critic cannot say that Dumas did not write them himself. . . . They are all his own, and the essential point of note is that they display all the humor, the goodness of heart, the overflowing joy of life, which make the charm of the novels. Here unmixed, unadulterated, we have that essence of Dumas with which he transfigured the tame 'copy' drawn up by Maquet and others under his direction."

Two volumes out of the six are now ready, nominally covering the period from Alexandre's birth (1802) to 1825, when the young man plunged into the full life of Paris, which was as the breath of his nostrils. There are many dull chapters in Volume I. — historical summaries and documents — though delightful stories of his childhood and adolescence more than make up for these few lets and hindrances. It has all the fascination of movement, full vitality, and gay irresponsibility which one associates with the creator of the immortal Three. (Macmillan, $1.75 per volume.)

"The Indian's Book," by Miss Natalie Curtis, is the direct utterance of the Indians themselves. They dictated and she recorded. Songs, stories, and drawings — all have been purposely contributed by the Indians. They sang the songs directly to the recording pencil, and they are written exactly as they were rendered. Explanations and tales connected therewith are set down as they were told and all the drawings, including the cover design and the title-pages, were made by the Indians themselves; some are in color and some in black and white. Most interesting of all is the arrangement of their songs to music, and a corresponding translation of their musical phrases placed one beneath another like lines of verse. President Roosevelt says in an introductory note: "These songs cast a wholly new light on the depth and dignity of Indian thought, the simple beauty and strange charm — the charm of a vanished elder world — of Indian poetry." Many of the songs are traditional and of lost

origin; some are current songs of the day; still others are quite new, taken from the lips of their own composers. Old men and young, mothers and maidens — all types of people— were sought that the collection might reflect as fully as possible the many sides of Indian life, and every contributor chose the song or stories he wished to put into the book, sometimes spending hours in deliberation. (Harpers, $7.50.)

Few recent books rival Madame Sarah Bernhardt's success in self-revelation. In "Memories of My Life," the strength of her individuality and the waywardness of her will are blazoned on every page. According to her own telling, the apparently chance words of the Duc de Morny, a friend of her family, uttered at a "family council" convened to discuss her future, were responsible for her being sent to the "Conservatoire." To this family decree she bowed, but from that time forth her actions, whether she slapped the face of an ill-tempered actress or ran away to Spain or bought pet lions, seem to have been dictated by only her own whim. She makes no pretense of any other motive for her many vagaries; yet she does not unduly intrude her egoism, as most moderns do who find it impossible to think and live within conventional bounds. The book is written in a breezy, racy style, with a wealth of anecdote and the keen sense of the dramatic which might be expected of the greatest actress of our time. (Appleton's, $4.00.)

Quite another view of France and of the French is given by Professor Barrett Wendell's collection of papers, called "The France of To-day." While lecturing on America at the Sorbonne and at various other French universities, he had peculiarly interesting opportunities of seeing the active, serious side of French life. He shows us that French character can be understood only by continually keeping in mind these most important qualities in the people — their earnestness, industry, their love of system and intellectual candor. He finds them most admirable in their system of education, their social and family life, their devotion to duty, to their parents, their children, and their religion. The chapter on the Relation of Literature to Life is a vigorous defense of the French against the charge of frivolity and moral lightness. He argues that the moral character of a nation is in inverse proportion to the amount of spiritual and practical idealism expressed in its current popular literature. The book will promote a better knowledge of an earnest, intellectual, great-hearted people, to whom we owe a great debt for artistic impulse and guidance. (Scribner's, $1.50.)

Dr. D. S. Sager's "Art of Living in Good Health" lays down these rules for right living: "Breathe deep; chew long; drink enough; eat little"; and this simple regimen is confidently proclaimed in an optimistic and wholesome and convincing way. It breathes of peace and prophesies a healthful age; it assumes the possible end of most physical ills. (Stokes, $1.35.)

Of the conditions in Russia painted by Mr. Kellogg Durland in "The Red Reign," we have had some inkling in newspaper dispatches; but the full story carries a degree of horror which no detached, separate details can convey. The narrative of occurrences in the so-called pacified provinces, of the deeds of Alikhanoff's Cossacks, the story of the treatment of Marie Spiradonova, form a record so fiendish and bestial as to make one's blood boil with shame and anger. It is a recital which stamps Russian government as a type of diabolism. (The Century Company, $2.00.)

In "Jay Cooke, Financier of the Civil War," Mr. E. P. Oberholtzer has collected a mass of documentary proof and evidence bearing upon the most momentous financial exploit in our history. The letters from and to Jay Cooke & Co., are the really valuable feature of the books. The story, the familiar tale of greatness grown from littleness, is told with little spirit, little fire. (Geo. W. Jacobs & Co., $7.50.)

What the Rev. Cyrus Townsend Brady calls "a battle history of America," but what some might consider a minister's glorification of deeds of violence, is found in the "American Fights and Fighters" series, of which five volumes have been published. But the clergyman-author is justified by the appeal that his stories make to the patriotic impulses of the American, for they are stories of men who, for the most part, rang true. The first volume ("Colonial") is a record of gentlemen soldiers fighting for gold and for the joy of the fight — battling under the flag of Castile, the Lilies of France, the Cross of St. George, or the black banner of the Buccaneers. The battlefields are scattered from the Caribbean to Hudson Bay, and the volume ends on the Plains of Abraham. The "Revolutionary" volume includes the great achievements of

our first ships-of-war, as well as the principal engagements of the long struggle that made us a nation. "Border Fights" might appropriately be bound in buckskin, for the volume brings together the backwoods and frontier battles of such rangers as George Rogers Clark, Daniel Boone, David Crockett, and Sam Houston. Two volumes ("Indian" and "Northwestern") tell the story of many fights as desperate as the tragedy of the Little Big Horn, where Custer and the Seventh Cavalry met their end. The United States army has no finer traditions than those which cluster about the rocks and cañons of the Indian country. These soldiers were "men with the bark on," and they went to their death as gentlemen unafraid. For example, a lieutenant once crawled under fire to General Forsyth, who was awaiting the final Indian rush, and reported quietly and simply: "I have my death-wound, General. I am shot in the side and dying." "No, Beecher, no," replied General Forsyth. "Yes," said the young officer, "good night!" (McClure's, $1.50 per volume.)

Dr. Albert Hale, in "The South Americans," helps to a better understanding of our southern neighbors, for his book is much more than the impressions of a tourist or the figures of a statistician. It sums up the experiences of twenty-five years among the Latin-Americans, and is written in a spirit of frank criticism tempered with admiring praise. For the ordinary man, it is a useful handbook; for the traveler, a practical guide-book; for the exporter, a business help. (Bobbs-Merrill, $2.00.)

It is fitting that Dr. Lyon Gardiner Tyler should have written "Williamsburg, the Old Colonial Capital." His family have lived there since the foundation of the town, and have added to its fame and achievement. In 1621 Henry Tyler patented 254 acres where Williamsburg now stands. In 1773 John Tyler, marshal of the vice-admiralty, died there. His son was Governor of Virginia and his grandson, who was Vice-President of the United States, became President on the death of William Henry Harrison, who also was born near the James River in Virginia. The present Tyler is president of the College of William and Mary, which occupies land that his ancestor patented 277 years ago. The book will interest the casual reader, for it is a good story with many strong personalities and some humor. It presents a clear picture of a community of intelligent, scholarly, and industrious people, about whom the American public has little information — and much of what it has is false. Before the Revolution, Williamsburg was the capital of Virginia, but was likewise a market for the tobacco of that section, and was the seat of several manufacturing companies, which were encouraged by all classes. After the capital was moved to Richmond, the city still held many cultivated people — such as the Rev. James Madison, the first teacher of political economy in any American college; Dr. John Galt, Surgeon-General of the United States; Charles Bellini, the first American professor of modern languages; John Blair, of the United States Supreme Court; St. George Tucker, author of the first American text-book on law; and many others. "They lived comfortably and well, but without any great elegance or luxury." They were an exceptional community, well worth knowing, particularly if introduced by so pleasant a chronicler as Dr. Tyler. Besides, the book is an important part of the growing historical literature of Southern communities, based on the people's study of their own past and no longer left to be told — or neglected — by New England writers, whose best work is naturally confined to New England history. (Whittet & Shepperson, Richmond, Va.)

"The Cradle of the Republic, Jamestown and James River," is the title of a companion volume by the same author. Although the history of Jamestown is better known than that of Williamsburg, and the book is somewhat weighed down by a chapter of Indian names it has the merits of its companion—a somewhat gossipy and always interesting account of perhaps the most interesting of our Colonial experiences. If Virginians had taken to writing such books earlier, the *Susan Constant*, the *Godspeed*, and the *Discovery* would be as well known as the *Mayflower*, which they preceded thirteen years. (The Hermitage Press, Inc., Richmond, Va.)

"Jock of the Bushveld" is a good dog story of a very human sort. Its hero starts as the under-dog in the litter, but he becomes the most famous dog in South Africa; and we feel a personal triumph in his victories. When we close that unavoidable chapter in every dog story (because a dog's life is so much shorter than a man's) we feel the loss of a real friend. Our credulity is not taxed to believe the author's statement that it is "all true." (Longmans, Green & Co. $1.90.)

The World's Work

WALTER H. PAGE, EDITOR

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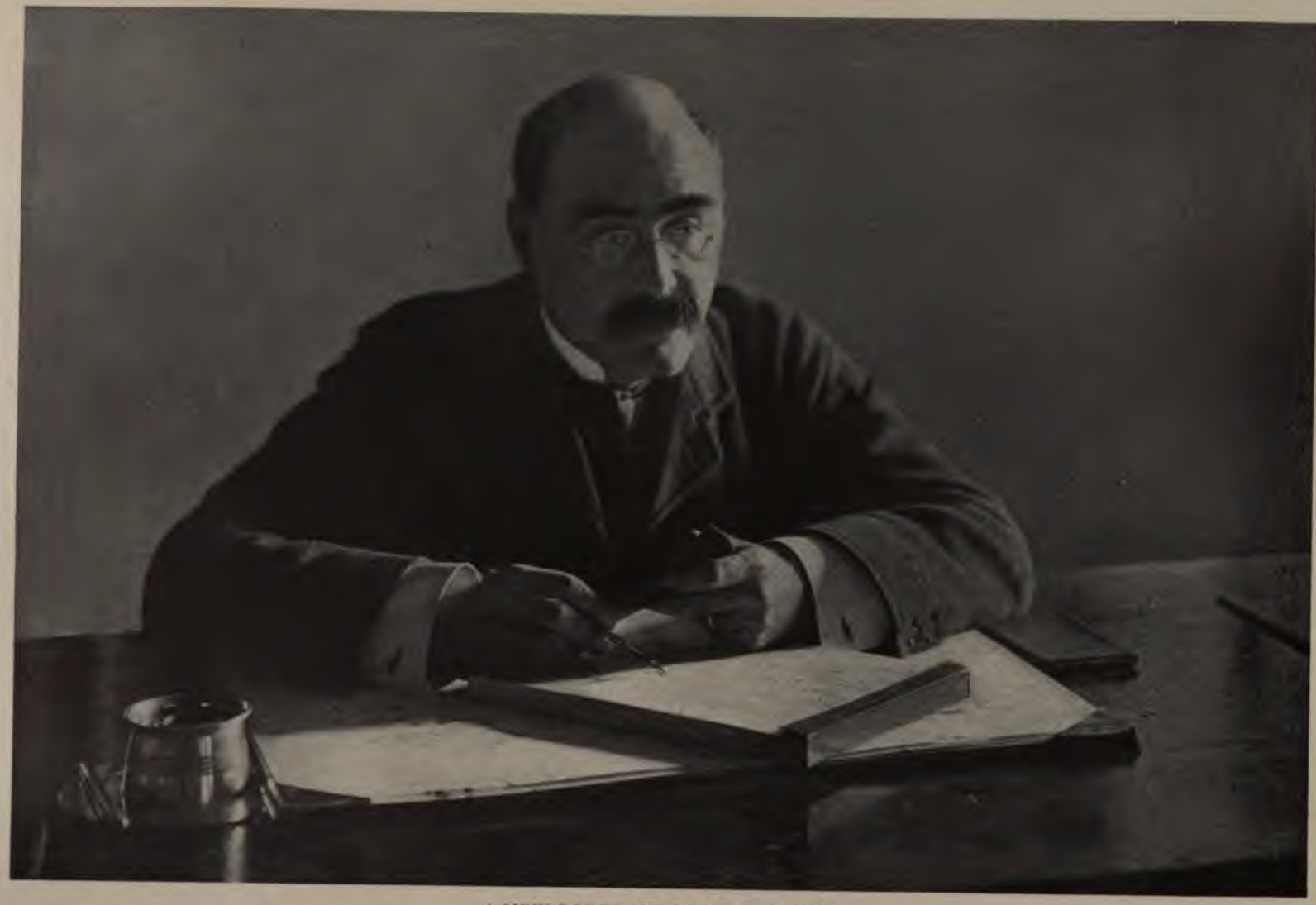

A NEW PORTRAIT OF MR. KIPLING

WHO IS THE FIRST WRITER OF ENGLISH TO RECEIVE THE NOBEL PRIZE FOR LITERARY ACHIEVEMENT

THE WORLD'S WORK

FEBRUARY, 1908

VOLUME XV NUMBER 4

The March of Events

SEVERE as the panic was and far-reaching and continuous as its effects are, the fundamental financial and commercial strength of the country has not been broken. There are many signs that it has so far suffered less than even conservative men feared; and, with fair crops this year, recovery will probably be so rapid as to startle the world.

Still, there may be trouble yet to come. We can hardly hope for a continuously steady return to normal activity and prosperity. It must be an uneven journey — how uneven and rugged, no man can predict. There may be more failures in the mercantile, in the industrial, and perhaps in the financial worlds. For the full effects of a panic do not come to the surface till months afterward, just as many of the mortally wounded in battle die slowly.

The first rebound toward financial recovery was remarkably quick; but the first rebound is always followed by other depressions — must, by the very nature of our business organization, be so followed. The readjustment between the banks and their customers has put brakes on many industries, in proportion to the difficulty of manufacturers and merchants in securing loans. For this reason industrial and mercantile embarrassments came and yet all the damage so far done is not great enough to spell disaster, but only, so far, to make a check.

Nobody can say how slow or how fast complete recovery will come, for nobody knows the total of weak or unsound business concerns or of the inflation that was mistaken for solid prosperity. But this is certain — bankers, manufacturers, merchants, business men of all sorts are during these months on trial. Their courage is on trial; for courage is what is needed — not a blind reckless sort of daring that will take risks on falling resources, but the quiet and insistent courage such as a few great leaders showed in Wall Street during the actual panic. In proportion as such leaders show themselves in every business community will the way back to normal conditions be easy and the journey continuous.

REBUILDING PROSPERITY

THE breakdown of prosperity was a breakdown of confidence. Whatever the several causes of it were, this was the result. The depositor lost confidence in his bank; the merchant lost confidence in his customer's ability to pay; the manufacturer lost confidence in the merchant's ability to pay; everybody at once wished to collect his debts; and the banks lost confidence in all but the soundest of their borrowers. Around this wide circle a general fear ran; and general fear is another name for panic.

The task now, therefore, is to restore confidence. But restoring confidence is not a mere mental performance. You cannot go about saying to the persons with whom you have dealings: "Now my confidence in you and your business is restored"; nor can men hold mass-meetings and remedy the matter by resolving that commercial confidence is again at work. Yet the restoration of

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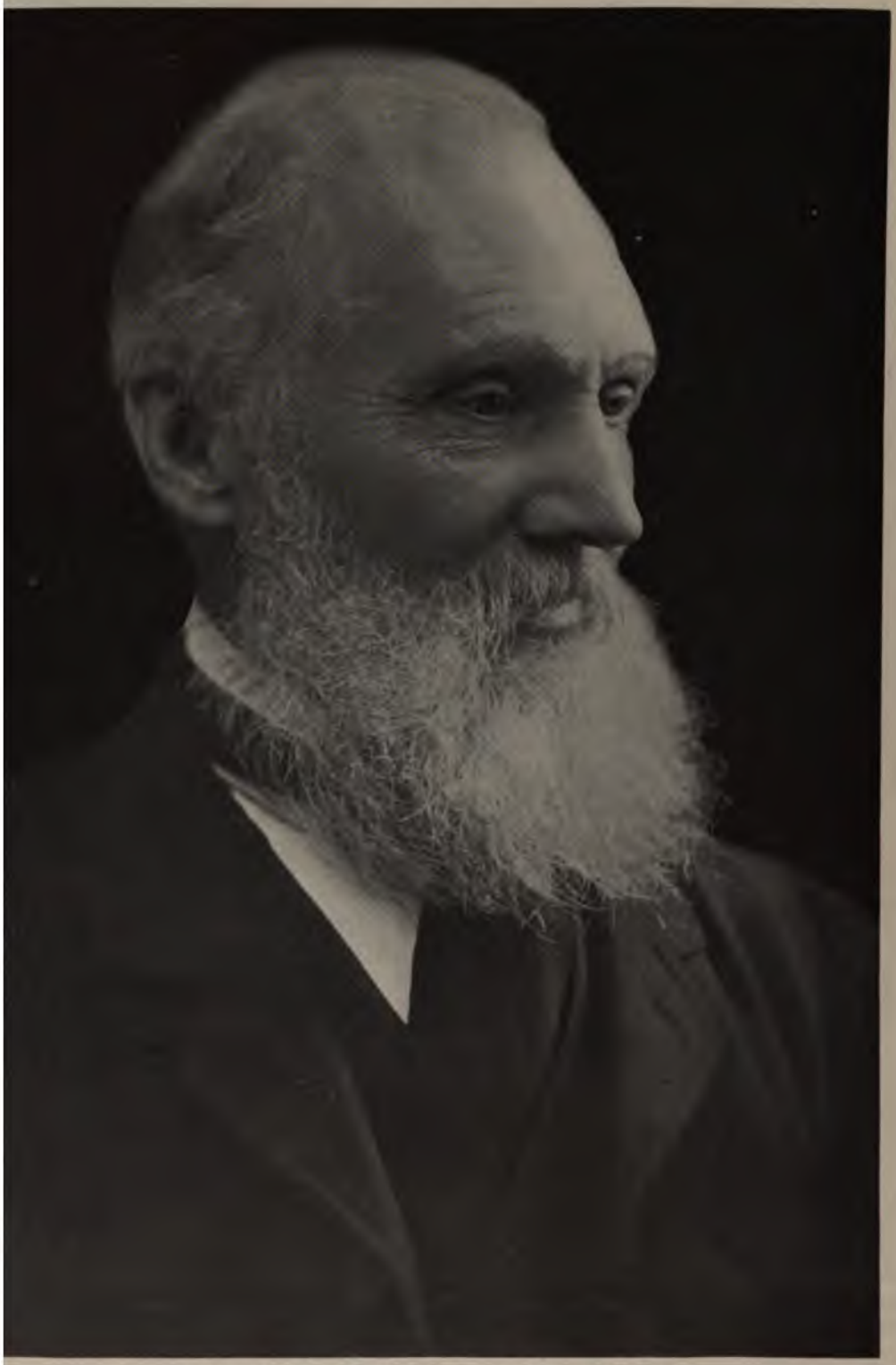
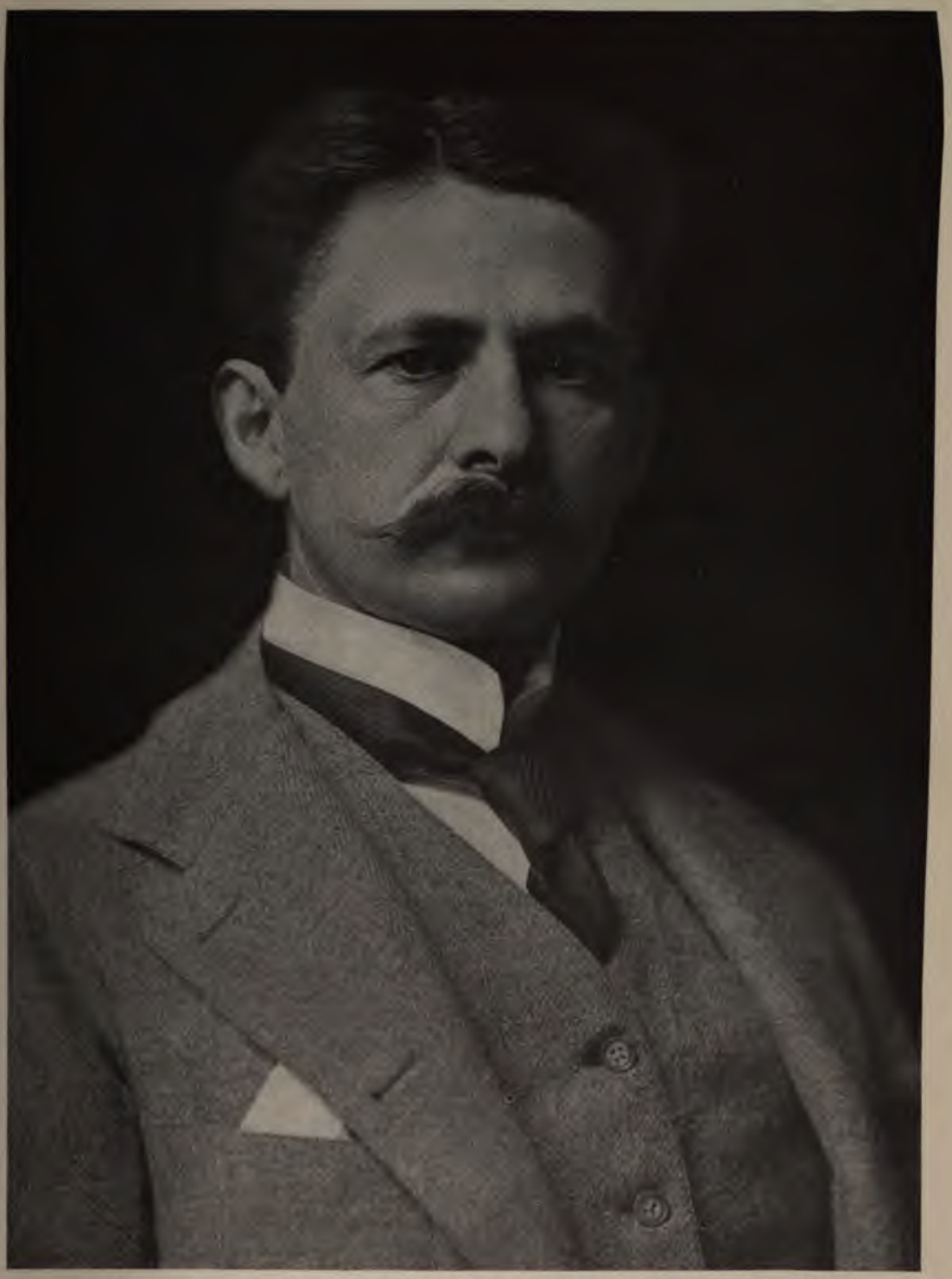


THE LATE LORD KELVIN (SIR WILLIAM THOMSON)

A GREAT TEACHER, A GREAT INVESTIGATOR IN PHYSICS, A GREAT INVENTOR, AND THE BUILDER OF A FORTUNE, WHO BECAME ALSO A MEMBER OF THE HOUSE OF LORDS, PROVING THAT A REALLY GREAT MAN MAY BE GREAT IN MORE WAYS THAN ONE



PROFESSOR ALBERT A. MICHELSON, OF THE UNIVERSITY OF CHICAGO

THE SECOND AMERICAN TO RECEIVE A NOBEL PRIZE, TO WHOM IT IS AWARDED AS A RECOGNITION OF DISTINGUISHED ACHIEVEMENTS IN PHYSICS

[*See "The March of Events," page 984*]

confidence is pretty nearly all that is needed to set all the wheels of prosperity going again.

For the recent panic differs from others that we have suffered in this important respect—it was not caused by bad crops or by the misdirection of industrial activity or by loss of actual wealth. The real wealth of the country and its productive organization are greater and better than they ever were before. There is much money — vast quantities of money — more than ever before. We have no great stores of necessities. There has not been an era of "over-production." We must still go on producing all the staple articles of trade and all the necessities of life in practically undiminished quantities. The restoration of commercial and financial confidence, therefore, is the main task. How can men go about so subtle a task?

One of the first steps is to get rid of unprofitable and unsound business enterprises and concerns. Always, especially in unusually prosperous eras, there arise in every kind of business a number of men and a number of concerns that live on a false basis. They swim on the tide. They contribute nothing to the industrial community. They are "carried" by easy credit — by other concerns or by banks. They are the result of bad management or of bad judgment or of misdirected work. If all these could quietly be got rid of, a very long step would be taken toward a general restoration of confidence.

To prune these unsound branches of the great business tree is obviously impossible. Men whose affairs are badly managed or are for any other reason on an unsound basis do not give up, as a rule, till they are forced to give up; and, in many cases, there is no way to force them except ways that often seem to make a bad situation worse. There are, for instance, many tottering concerns held up by bankers or other friends, lest their open failure should shake confidence still more.

Still there are ways quietly and decorously to eliminate unsound activities and conditions. One way is that every capable man should see to it that no part of his own affairs is unsound. If one part of his business has been "carried" by another part, he had better discontinue it. The whole business will be the better off.

Again, if you owe money, pay it at any reasonable cost. Sometimes it is wise, at such a time, to pay even at an unreasonable cost. Every dollar cheerfully and promptly passed from man to man makes the passage of the next dollar easier in either direction.

During the time of great prosperity you increased your expenses — the expenses of your business and the expenses of your living — more than you meant and more than you knew till you came to a halt. In your reduction of them, you have a good chance to show your best judgment — to lop off those that do not contribute to efficiency, but to make sure that you do not go further. If you cripple your working efficiency (assuming that your business is really a sound one), you will have to build it up again at a wasteful cost.

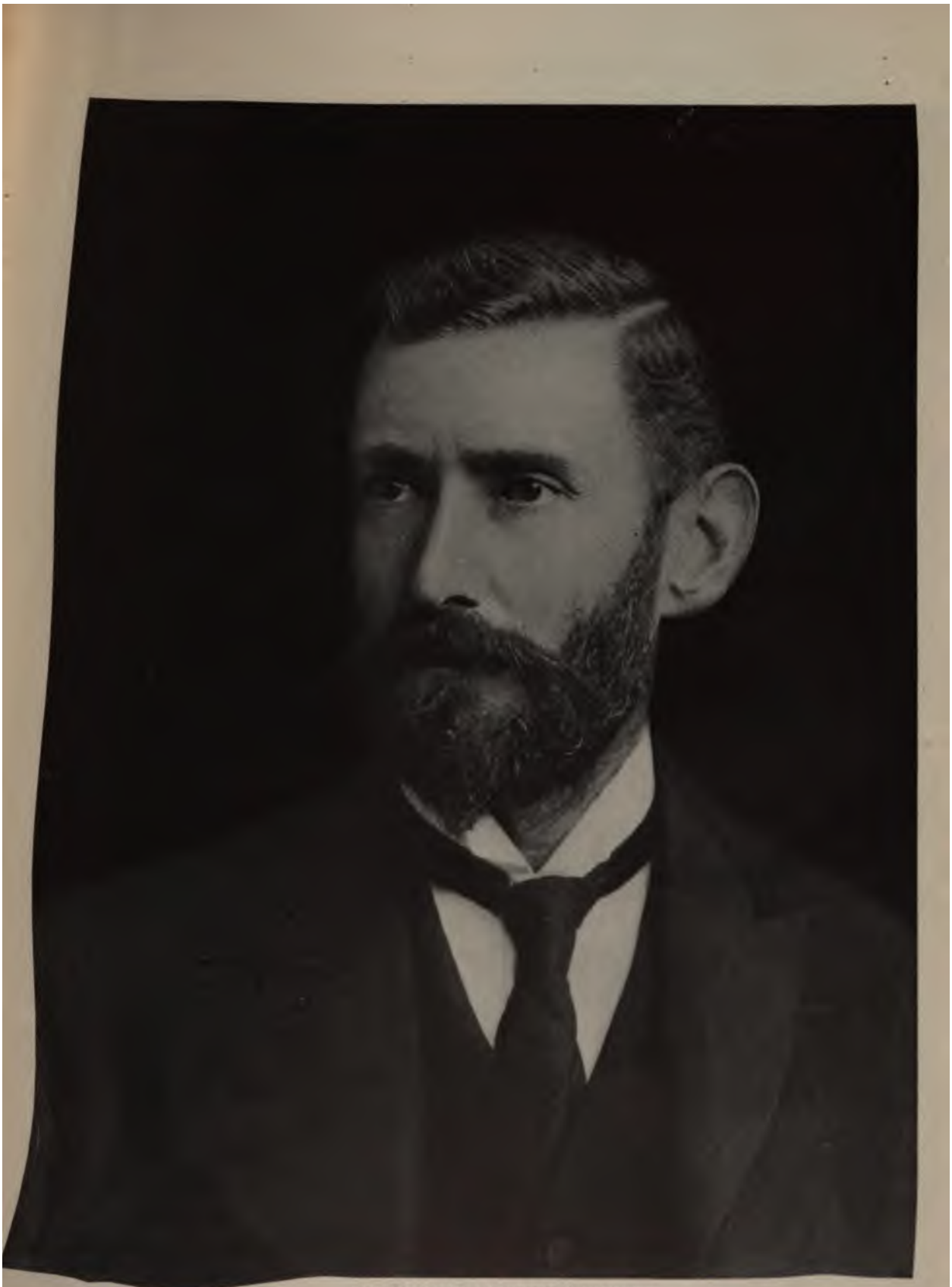
These ways of building up confidence, obvious as they are, are not entirely negative. The whole commercial world, when it suffers a panic, must find a cure, as overworked strong men do, not in idleness nor in despondency, but by working sensibly and moderately and yet earnestly, by cleaning house and toning up the whole system.

In every such time, too, every man of affairs has an obligation to the whole business community. The restoration of confidence must be the combined work of the community, and every man has a chance — indeed, it is his duty — to contribute to it. And every man contributes to it in proportion to his sound action in managing his own affairs and to his consideration shown to others. Pay all your debts if you can, but be as considerate to your creditors as your condition and safety will permit. Do not take advantage of another's misfortune.

In a word, since business confidence rests on character and, in the last analysis, has no other basis, put all your character into every part of your own business. See that it is all sound, that no part of it is inflated, nor misdirected, nor wastefully conducted. Then show your character in dealing with others — by helpfulness, consideration, energy, judgment. We broke down because a part of the business world suffered a temporary breakdown in character. To reverse the process is to lead back to prosperous activity.

ABOUT BUSINESS LEADERSHIP

ONE of the effects of every panic is the loss of courage which men suffer. The *Wall Street Journal* reports that not a few men who were strong leaders of big enterprises last year have had their spirits crushed, and it speaks of others whose mental vitality



SIR HORACE CURZON PLUNKETT

FOUNDER OF THE IRISH AGRICULTURAL ORGANIZATION SOCIETY, AND ORGANIZER OF COÖPERATION IN IRELAND, WHICH IS BRINGING A NEW ERA IN THE PROSPERITY AND THE SOCIAL LIFE OF THE PEOPLE

(See "The March of Events," page 9481)

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THE CENTRAL AMERICAN PEACE CONFERENCE, WITH SECRETARY ROOT AT THE HEAD OF THE TABLE

WHOSE RECENT MEETING IN WASHINGTON RESULTED IN AN AGREEMENT WHICH, IF RATIFIED BY THE REPUBLICS, WILL GUARANTEE PEACE AND FUSE THEM INTO A SINGLE GOVERNMENT

[*See "The March of Events," page 9839*]

has been so shattered that they will never again do important work. This loss of courage and of leadership is perhaps more serious than the loss of real wealth. When strong men see well-laid plans fail, not through mismanagement, but through the general falling away of confidence, and when the same constructive qualities that brought success suddenly lead to failure, there comes a very serious loss of energy in the business world; for leadership counts for quite as much there as in military affairs. But, as in military affairs, if fools or knaves get power, in the general slaughter good captains fall as well as bad ones; and to a certain extent the army has to be reörganized and new leaders found. Such an experience has its human tragedies and takes toll of courage and even of life, as well as of material values.

If every kind of business and every business community have good captains now, whether they be old or new — men of real courage and of such good judgment as to win the complete confidence of their fellows — the work of restoration will go steadily forward.

But all such generalities are useful only as they have personal application. If you are a business man and have courage and qualities of leadership, you now have an opportunity to show them for the benefit of your community. If there are men about you who have these qualities, rally to them and help to bring the community to their methods. After all, whether we are to be slow or quick in coming back to normal conditions depends on the aggregate action and mood of individual men, you among the rest. The panic didn't fall from heaven, nor is prosperity going to descend from the clouds. Both are the results of every-day individual conduct and of the aggregate of individual character.

THE WAVE OF BANKING REFORM

LESS than four months ago it seemed hopeless to expect any sweeping reform of the banking conditions throughout the United States. At every session of Congress for years, attempts had been made to pass or to amend the laws looking toward better currency, sounder banking principles, more efficient supervision of the banks. Every Comptroller of the Currency for many years had asked for a more adequate appropriation to make his supervision better. The best that any of the reformers was able to get was some slight change of little help.

In the states it was the same. Reform of the New York laws has long been recognized in banking circles as imperative. Albany did nothing. Supervision by the banking department was a jest. The trust companies and the state banks could, had they cared, have gone much farther than they did go in the direction of unsound banking. Only the strength and cleanliness of the banking community itself stood between the banks and debauch.

But to-day, thanks to the panic, New York is awake to the danger of unsound banking, and the chance of some real reform at Washington seems good. The Hughes Commission promptly appointed in New York reported promptly. Its recommendations are sound. Governor Hughes has already endorsed them. The Superintendent of Banks, Mr. Clark Williams, ordered the state institutions to make weekly reports, beginning with the last week in January, so that the public will not have to content itself hereafter with a partial statement of the condition of the banks, but will have the figures for them all.

A good start has been made. The legislature of New York may even go too far. Yet the movement to limit the deposit of savings in state banks and trust companies, the movement to force such institutions to safeguard their savings deposits as well as they are safeguarded in the savings banks, and the movement for a stronger reserve against current liabilities in the trust companies are deserving of the strongest popular support. In fact, unless the people of this state support such laws, they stand in their own light.

In other states reform starts more slowly. The lead of New York was needed, perhaps. In the long run, we may hope, the lesson of 1907 will bear fruit in the shape of adequate savings-bank laws in every state. Only nineteen of the states have even the semblance of such laws to-day, and only half a dozen have adequate laws. In many states, the savings of the people are exposed to the risks of the commercial bank. It may well be hoped that the wave of banking reform which has swept over New York will carry into these states an overwhelming movement in the direction of separating savings deposits from commercial deposits.

The recent banking troubles have given an immense impetus to the movement for

postal savings banks. If every state in this country had adequate savings banks, there would be little need for the postal banks. Because in nearly every state the savings of the people are exposed to dangers that they should not be obliged to meet, the postal savings idea has spread and will undoubtedly become more and more popular as time goes on.

Postal banks will at least give safety to the small depositor, where savings banks are not properly safeguarded. On the other hand, they will not give an adequate return in interest. Moreover, they will draw away from the various communities the funds of the depositors, taking them to great financial centres rather than allowing them to remain and be used in the communities in which they were gathered together. Nor does it seem at all probable that the Government will administer these banks any better than it administers the postal service. Moreover, the present national bank supervision does not give promise of very efficient governmental bank management.

The net result of new banking legislation bids fair to be good. Even the hysteria of California's Governor, Mr. Gillett, will probably result in strengthening the safeguards on trust company banking in that state.

If 1908 brings to the people of the country an added grist of laws that can be enforced, and that shall make bank deposits safer, we shall probably live long enough to thank Fate for the banking panic of 1907; for it may save us from a worse catastrophe.

THREE STORIES TOUCHING BUSINESS MORALS

HERE are stories of three men who stand well, or did so stand for many years, in the community in which they lived. An interesting question is: Do they deserve now to stand well, or are they enemies of the common welfare?

I

Smith (so we will call him) is a prosperous man who kept an account in one of New York's substantial banks. During the panic it was hard even for prosperous men to get money for their pay-rolls and other legitimate purposes. So anxious were many concerns not to cause inconvenience to their employees that they paid as much as 3 per cent. to turn their checks into cash. Smith, knowing this, and having $10,000 in the bank (which, by the way, he had originally deposited in the form of checks and drafts) cast about for some way to make money at the expense of somebody else. He asked his bank to cash his check for $10,000. The bank officers agreed to do so if he would assure them that he needed the cash. To get it he said that he had made a purchase, and that the seller would not take even a certified check but demanded cash and, the bargain being a good one, he did not wish to lose it.

He received the cash and straightway took it to a money-broker's and got for it a check for $10,300. This check he foolishly deposited to his credit in the same bank from which he had drawn his money. The cashier recognized it as the check of a well-known firm of money-brokers, and upon questioning the depositor forced him to admit the deception that he had practised, and requested him to take his deposit away. "We will not knowingly have a customer of that kind in the bank," he said. Smith, after many protestations and pleadings, was forced to accept his dismissal, thereby illustrating the proverb that a good name is more to be chosen than $300.

II

Jones (or so we will call him) was discovered by a friend in the frenzied line of persons who were drawing money from a trust company which did not fail. He was a man of property and of standing. The friend expostulated with him, and tried to convince him, first, that the trust company was solvent; secondly, that it was his duty to set an example to the less intelligent and more timid; and thirdly, that, even if there were real danger, he should take his chances with the rest and not help to bring on general disaster. To this Jones replied that everybody must look out for himself, and the rest of the world might go hang. His friend's arguments proved unconvincing and the friend offered to bet him a hat that the trust company would pay everybody. He accepted the bet and when last heard from had not even paid the wager — which seems to prove that some timid people are untrustworthy in more ways than one.

III

Brown (or so we will call him) tried to do what Smith did, but his bank would pay only in silver coin. Being greedy, he decided to

accept the silver and to hire a truck and men to guard it. But the money-brokers declined to buy this silver in such large quantity unless the bags were left for several days to allow them to count it; and they would give him only a receipt for bags "said to contain $10,000." This receipt being of no use to Brown, he inquired where he could get the silver changed into bills, and he was told at the sub-treasury. But the sub-treasury, being bothered by several gentlemen of the same ilk, would give him only the same kind of receipt — "said to contain," etc. By this time he found his silver a burden and an expense, and he carted it back to the bank, where he was told that all dealings with him had ceased. After paying his expenses for the hack and guards, and several days' delays on a falling premium, he came out barely whole on his venture and lost a reputation when a reputation was most valuable — which seems to prove that a man endowed by providence with the intelligence of a truckman has no business to undertake large financial transactions.

The important thing about these experiences is that all these men felt that they had been badly treated and had acted with commendable zeal and enterprise; and, worse still, many of their friends agreed with them, claiming that they had been, or had tried to be, "smart." One wonders what proportion of our people feel that in time of stress everyone has the moral right to forget the interest of everybody else. How strong or how weak is most men's sense of loyalty to the whole community, when by a selfish disloyalty they can make, or think they can make, private profit? May these little experiences not show the connecting link between panic and — a lack of character?

THE PASSING OF CORPORATION SECRECY

MR. JOHN D. ARCHBOLD, vice-president of the Standard Oil Company, has declared that the policy which his company so long maintained of silence about its affairs and of silence under attack has proved to be an erroneous policy; and the commercial public eagerly read what he wrote in the *Saturday Evening Post*, of Philadelphia, about his company's methods. And there is no doubt of an enormously favorable effect of such a declaration on public opinion. Similarly, President Trumbull, of the Colorado and Southern Railroad, spent some time in making public addresses to business men along the line of his road about the policies and aims of his company.

In a sense, it is true that the business affairs of an industrial corporation or even of a railroad are its own affairs and that the public, beyond its stockholders, have no right to be curious about them. But, since public opinion rules us at last, it will act in ignorance, as any other ruler will act, if facts are withheld from it. The fact which it has been hard for many great corporations to learn is that they are in a large sense public institutions. The public, which is served by them and maintains them, so regards them. Always, too, beyond a legitimate right or even a legitimate curiosity to know something about them, there exists a desire to know; and this desire, if it be denied, or seem to be denied, easily turns into suspicion. For there is an inevitable prying quality in public opinion, which has no doubt been made very acute by the prying quality of our newspapers for a generation—an illegitimate curiosity that goes beyond the public's rights. But, whether this curiosity be legitimate or not, it is wise to heed it. It is necessary, in fact.

And it is well that it is necessary. A policy of frankness with the public is the only wise policy to pursue. It would be interesting to know to what extent foolish and fanatical local legislation against railroads would have been lessened if all the railroad companies had been frank with the public and had taken the trouble to keep the public informed about their activities and aims. In the first place, some activities and aims would have been greatly modified if they had been stripped of all secrecy. In the next place, the public would have had more facts to draw conclusions from and there would have been, consequently, a less play of sheer prejudice.

If this has been a hard lesson to learn, it is a very useful one; and, while it is to be hoped that all great corporation managers and railroad presidents will not take to writing magazine articles and making speaking tours, the examples of Mr. Archbold and Mr. Trumbull ought not to be lost by other men of similar positions. The public is a most unreasoning thing if it be neglected, or if it think that it has been neglected or imposed on; but it may be a very reasonable master if it be treated with confidence and frankness. The great art of taking it into one's confidence far enough to satisfy all its legitimate rights and not far enough to encourage improper prying

is a necessary part of a great corporation manager's equipment. He must be a politician in the best sense of the word — in a frank and not in a cunning way.

But one thing is certain, the day of secrecy is gone.

FOR A BROADENED AND EFFICIENT POST-OFFICE

POSTMASTER-GENERAL MEYER has asked Congress for a parcels-post and a system of postal savings banks. He recommends, as most of his immediate predecessors have done, that the weight limit for parcels be raised from six to eleven pounds. The parcels-post has been a success wherever it has been tried abroad. There is no logical argument against it and the opposition comes chiefly from those who profit by the bad and costly system of package delivery now in existence. For example, to send a 4-pound package from Chicago to Auckland, New Zealand, costs 48 cents; an 11-pound package $1.32. To send a 4-pound package from one part of Chicago to another part costs 64 cents, and an 11-pound parcel cannot be taken by the post-office at all. Mr. Meyer's recommendation includes a special parcels-post on rural routes at reduced rates for packages originating and delivered on the same route, for the convenience of the farmers and country merchants.

He asks also for postal savings banks. They would make places of deposit convenient to all the people. At present most of the country is poorly supplied with savings institutions. The experience of Canada has shown that a postal savings system can be handled safely and economically on American soil. If this can be done by our neighbors, why not by us?

Not only has the Postmaster-General himself thus put together large plans for usefulness to the people in the greatest number of ways, but in the administration, of the department there has come a radical change. Consider, for example, the difficult duties that fall to the Third-Assistant Postmaster-General, who has to do with the complicated law concerning periodical literature. Under a foolish previous administration, the whole publishing world was kept in constant confusion, and the obvious main purpose of cheap postage on periodical literature was utterly forgotten and a "smart" effort was made really to censor the whole American press. Under Mr. Lawshe, the present Third-Assistant, a reasonable interpretation is put on the same body of law, and lo! it works well. There is a greater difference between the size of one man and the size of another man than between the sizes of worlds in the universe.

TWO POSSIBLE LESSONS FROM CANADA

PRESIDENT ELIOT of Harvard has pointed out the radical difference between the relation of our states to the Federal Government and the relation of the Canadian provinces to their central government — a difference that has a direct bearing on our most serious problems. In Canada all powers not specifically delegated to the provinces belong to the central government. In the United States all powers not specifically delegated to the Federal Government belong to the state governments. Now, most recent problems of government — such industrial problems, for instance, as railroad regulation and corporation control — are national in their scope. In Canada they are, by the nature and organization of the Government, questions for the central authority to deal with, and not at all for the authority of the provinces. They are national questions because communication is so swift that the country has — in effect — shrunk in area in proportion to the excellence of its transportation. For the same reason our Federal Government is theoretically the most logical agency to deal with them, but by our system the "general welfare" clause or some other general clause of the Constitution must be stretched to permit our Federal Government to take such tasks in hand. Yet, as Mr. Eliot has said, in effect the whole United States is now smaller than New England was when the Constitution was adopted. Whether the Canadian system or our own be the better may still be an academic question; but time will prove.

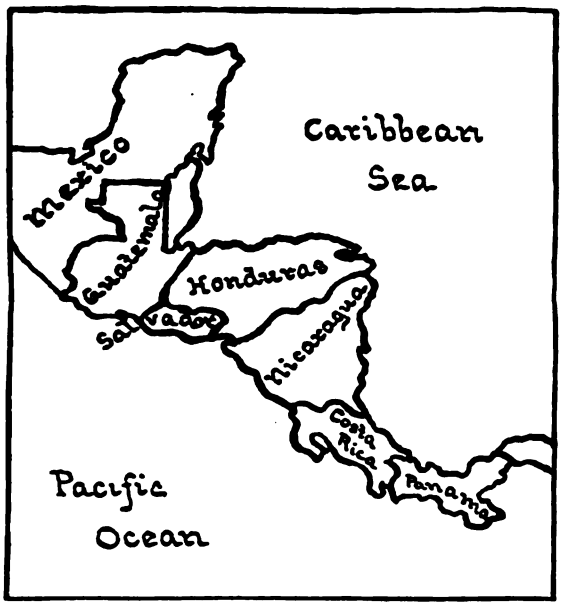
II

Among the national measures which the Dominion Government has passed is an "Industrial Disputes Investigation Act." Either party in any labor dispute (in certain designated industries) may ask for an investigation by a board of three members, one to be appointed by the employers, one by the employees, and the third selected by these two. The board must be appointed within fifteen days. During its investigation any lock-out or strike is

punishable by large fines. But, as soon as the investigation is made, either side may proceed by any legal method to obtain its end. The object of the investigation is to afford full and accurate publicity in all disputes. Informed public opinion is counted on to prevent industrial disturbance; and so far it has worked admirably.

A POSSIBLE NEW ERA IN CENTRAL AMERICA

A NEW chapter in the history of the republics of Central America was probably begun when their representatives recently met in Washington and formulated a set of articles whose ultimate aim is the fusion of the states of Guatemala, Honduras, Salvador, Nicaragua, and Costa Rica into a single strong federation. The delegates came in response to a call from the United States and Mexico, and they completed their work with despatch



THE STATES REPRESENTED AT THE CENTRAL AMERICAN PEACE CONFERENCE LIE BETWEEN MEXICO AND PANAMA

and unanimity. In the articles of confederation agreed upon as a preliminary step, the people of the United States see a sort of reproduction of the process by which we made the transformation from a band of disorganized colonies to an indissoluble union.

The delegates reached agreement first upon a treaty of peace and unity. Every difficulty that may arise among the republics is to be decided by a tribunal to be known as the Central American Court of Justice. The citizens of one republic are to enjoy the rights of citizens of other republics while living within their borders; the interchange of official relations shall be carried on; an agricultural college is to be established in Salvador; a school of mines and mechanics in Honduras; and a school of arts and trades in Nicaragua — each to have the support of all the governments. This treaty is to remain in force for ten years and thereafter for one year from the time that any one of the republics gives notice of its wish to terminate the agreement.

The second article relates to the court of justice, which is to sit at Cartago, in Costa Rica, and will consist of one justice and two substitutes from each country, the incumbents to be named by the legislatures for terms of five years. The jurisdiction of the court will include the provisions of the treaty and other matters of international law. Each republic is to bind itself to observe and enforce the decisions of this tribunal.

The third article, which is to be in force for at least five years, provides for an investigation of the monetary and customs systems of the five republics, their weights and measures, and other matters that have a direct bearing upon their economic welfare.

Article four forbids any of the states to recognize governments that may come into existence as the result of petty revolutions.

The fifth — and one of the most important — provides for the establishment in Costa Rica of a normal training school for the teachers of all of the Central American States. This is to remain in force for fifteen years and is an effort to unify the diverse systems of education.

Article six — the most indefinite of all — provides for an international bureau to be located in Guatemala. It is to be composed of one delegate from each republic and its scope includes practically everything that is understood in the phrase "for the good of the order." International politics, education, commerce, agriculture, manufactures, law, economics, sanitation, and many other branches of human activity are to be managed by these five men.

The seventh, which deals with the problems of transportation and communication, recommends the appointment of a commission to study routes within the limits of Central America that are suitable for a Pan-American railroad.

The last deals with the delicate question of extradition — delicate because so many of the prominent men of these republics have been involved in revolutions and have taken refuge beyond the border-lines of their respective countries.

The treaty and the conventions must, of course, be ratified by the republics individually. This list of articles, which to us seems to be merely a businesslike agreement, includes some "burning questions" in Central America, and much oratory will be provoked — and not a few personal encounters. However, the demand for federation and stability comes from business interests and does not rest wholly upon a sentimental basis; and the substantial citizens of these long turbulent states are keenly alive to the wonderful prosperity that has come to Mexico since tranquillity became the order of the day. If this plan of unification, peace, and practical progress be carried out, it will be an important chapter in the history of the Western Hemisphere.

THE CRITICAL PROBLEM OF THE RAILROAD COAL MINES

AFTER May 1st, it will be illegal for any railroad to carry coal over state lines from any mine in which that railroad has a proprietary interest, direct or indirect.

And capital is scarce. The coal lands in Pennsylvania under the control of the Reading, the Lehigh Valley, and the Lackawanna railroads alone are worth, one may say, several hundred millions of dollars. Under the Hepburn Act of 1906, these lands must be sold prior to May 1st, or the railroads must cease to carry the coal across state borders.

The object of the act, of course, was to force the sale of these lands and mines. The act, however, failed to supply a buyer. It is not too much to say that to-day there is no buyer in sight. The railroads can, at will, create dummy companies to buy these lands; but that, clearly, is away from the intention of the law.

Steps are under way, on the part of the railroads, to secure an extension of time to carry out the sale. In fact, if such extension is not granted, it is an open secret that the companies will discuss the plan of obeying the law, closing the anthracite mines except for local state production, and of leaving the larger problem to be solved later, in whatever way it can be solved.

But no such nonsensical result is likely to come. There is no reasonable doubt that an extension of the time will be granted, and the enforcement of this law should be delayed until capital can be found to finance a transaction so gigantic. If there should be a serious struggle over the matter, it might open one of the most dangerous agitations in our recent history.

Obviously, if a genuine sale of these properties is forced, the properties must be sacrificed. Injunctions, damage suits, and endless litigation would ensue. In nearly every case these coal lands are mortgaged under railroad bonds. In every such case, an adjustment must take place. Bondholders and stockholders of the railroads would have separate and distinct grounds of suit and restraint against such a sale.

The Government of the United States would seem to many the one logical buyer. The whole problem, involving so many considerations of state rights, of property rights, of liens, of values, is one of the worst puzzles of our era. Primarily, it involves the constitutionality of the Hepburn Act; and the settlement of that question may be the first step in the solution of the problem.

DRIFTING TOWARD THE PRESIDENTIAL CAMPAIGN

GOVERNOR JOHNSON, of Minnesota, may possibly be the Democratic nominee for the Presidency. He or some such man will surely be if the Democratic delegates to the convention have the courage of their constituents' convictions, which they will probably lack. For the machinery of the party seems to be strongly committed to Mr. Bryan. But there is very grave doubt whether the masses of Democrats prefer him. Talk with well-informed men in any part of the country and you will instantly discover that they regard Mr. Bryan's defeat as certain, if he should be nominated. Nobody gives any good reason why he should be again nominated, and yet everybody expects him to be.

If the party's managers, or if any group of Democrats, can in the next four or five months pull the party out of this negative mood and inert drift to defeat, and nominate (let us say) Governor Johnson, there will be a contest with at least enough spirit in it to be interesting; and the Democratic party will start itself again on the way toward a position where

it can fight and win — if not this year, some other year.

For Governor Johnson, like Mr. Cleveland, goes back to a reform of the tariff as the main party issue and the hope of victory. Every other task that Democratic orators and managers will formulate has been done, or is likely to be done, by their opponents. There is no radical difference of opinion or of position between the two parties but this. And, if the Democrats throw away their chance to emphasize tariff reform this year — if, in fact, they fail to concentrate their campaign on it — the Republicans may take up the subject before another Presidential election comes and go just far enough in removing the worst scandals to prevent the Democrats from making an effective campaign thereafter.

For thoughtful students of current politics, this is the centre of interest. Most other subjects that the campaign orators will discuss are windy — such as imperialism, concentration of governmental power, and all such; for the regulation of railway rates and the restraint of corporations, which is the only other living subject, will not change the usual party lines. What Mr. Roosevelt's administration has done will outweigh what the Democrats may promise to do.

There is one influence on the election the effect of which cannot yet be very accurately foretold — the influence of business depression. If it continue till the Fall, it will have a strong tendency to help the Democrats ; for a business depression always works to the injury of the party in power. Yet, critical as a large part of the financial community is of Mr. Roosevelt, the business world in general is far more favorable to a Republican than to a Democratic administration, especially to an administration under Mr. Bryan. Governor Johnson, who has not been identified with commercial or financial vagaries, would win the confidence of the business world if any Democrat can.

THE NAVAL CONTROVERSIES

THERE has been, time out of mind, an earnest and sometimes bitter conflict between the staff and the line in the navy. Ten years or more ago, it was thought that this old ghost had been put to rest, but it was not. It is one form of this old controversy that set the President and Rear-Admiral Brownson at odds. The President, against the advice of the Rear-Admiral, who was the head of the Bureau of Navigation, appointed a medical officer to the command of a hospital ship. Thereupon Rear-Admiral Brownson resigned his post because, as he expressed it, the President's action implied a lack of confidence in his professional judgment. And the President in a letter to the Secretary of the Navy, severely rebuked the Rear-Admiral for resigning from the Bureau of Navigation from personal pique.

Whether hospital ships should be commanded by medical officers is a question upon which laymen may hardly express an opinion. The President holds that they ought to be commanded by medical officers, as is the case in the Japanese navy. But, apart from the merits of the case, the letters that the President wrote on the subject caused a momentary sensation because of his rebuke to the Rear-Admiral for resigning from the Bureau of Navigation for such a reason. Here arises a question of naval discipline and ethics.

This incident reveals the bitter feeling in the Navy about the old controversy between the staff and the line; but it would not have made much impression on the lay mind if it had not happened to come simultaneously with severe criticism of the construction of our most recently built battleships and of the whole bureau system of naval administration. These criticisms, which for a long time have been persistent, were massed in an article by Mr. Reuterdahl in *McClure's Magazine*, just when the fleet was starting for its Pacific cruise, and they caused the public seriously to wonder whether our naval construction has been as faulty as its critics assert and whether the bureau system of naval administration is bad because of constant conflicts of authority and a consequent lack of efficiency. The President has called these criticisms gross exaggerations. Doubtless much lay criticism deserves this description; but there are naval officers who, in effect, express agreement with the critics, as far as official propriety will admit.

At some time in some way the bureau system will undergo investigation and possibly modification. As regards the endless disputes about the construction of ships, since the building and the equipment of warships is always undergoing change, the ships that are complained of are likely to go into the junk-heap before these controversies end. In the meantime

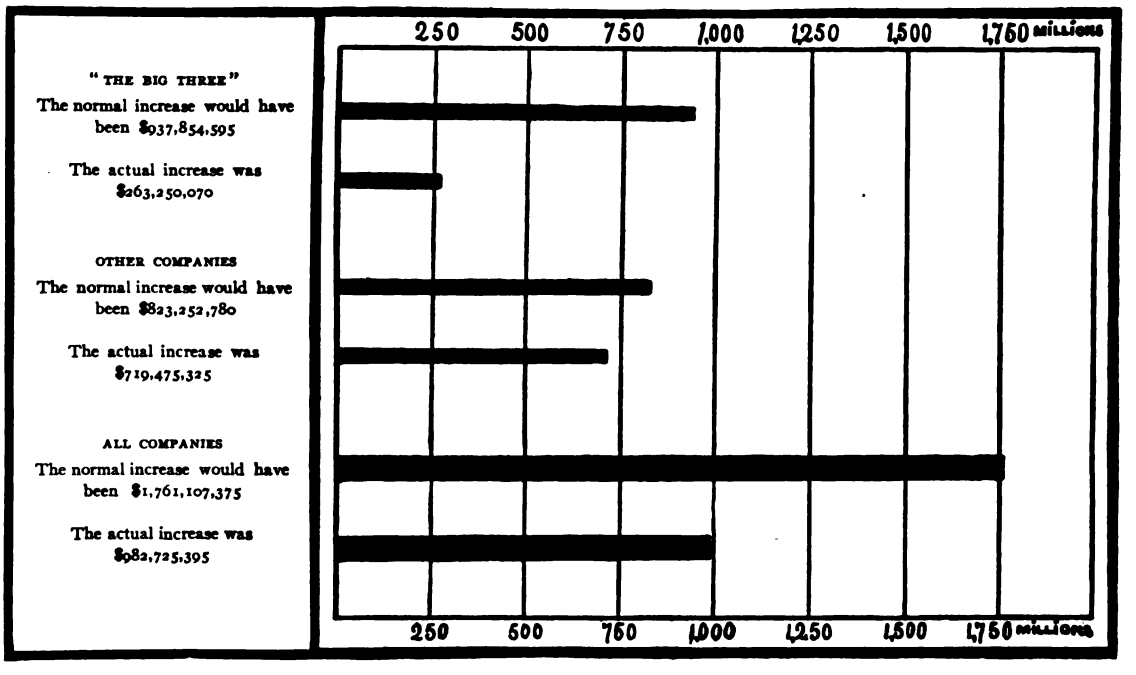
the public has this consolation: that the efficiency of the officers and of the men on the ships escapes criticism from every quarter and receives the praise and appreciation of everybody who is supposed to have a knowledge of the subject.

NORMAL LIFE INSURANCE CONDITIONS

MR. EDWARD BUNNELL PHELPS, editor of the *American Underwriter*, an insurance journal, has computed for THE WORLD'S WORK the falling-off of life insurance that was caused by the insurance investigation in New York during the first year thereafter; and this falling-off is presented in the following diagram:

policies in the "Big Three" companies; and the estimate is that about half of the men who were engaged in life insurance before the investigation have gone into other work.

Of course, since that first year following the investigation, the business of these big companies, as well as of smaller companies, has gained over 1905-6; and no doubt the gain has been of a more normal kind of insurance than the great volume of policies that were written in the reckless period of "investment" insurance. The business is sounder and fewer men are bankrupting themselves to keep abnormal policies paid up; and — Mr. Hughes is Governor of New York and a new insurance law is in effect in this state.



A COMPARISON OF THE ACTUAL INCREASE IN AMERICAN LIFE INSURANCE IN 1905-06 WITH THE PROBABLE INCREASE HAD CONDITIONS BEEN NORMAL

Computed from the reports of the Connecticut Insurance Department for a period of eight years

The meaning of it is that only about four-sevenths as much insurance was written during the year that followed the investigation as would have been written if there had been no investigation; and the percentage of loss by the "Big Three" New York companies was enormously greater than the percentage of the falling-off felt by the smaller companies.

The calculation is that 87,000 more policies were allowed to lapse during that year than would have been allowed to lapse under normal conditions, of which nearly 75,000 were

THE GEOGRAPHY OF OUR LIQUOR LAWS

ABOUT one-half of the total area of the United States is now "dry" and the barometer indicates that the "drought" will extend to other sections during the present year. The anti-saloon sentiment has developed with great rapidity in every part of the Union except Pennsylvania, New Jersey, and the Rocky Mountain States, but the most interesting fact about the movement is the way in which it has been brought about. The leaders have not appealed to lurid charts in

the school physiologies nor demolished private property with hatchets, but have based their arguments upon economic principles both sound and indisputable.

In the South, for instance, where the most notable prohibition victories have recently been won, there is no Prohibition party of any political importance — but there is a general recognition of the fact that a drunken man, especially a drunken Negro, is a public menace and a public expense. In the interest of decency and order, many men have been willing to overlook their individual preferences and unite in passing laws that must inevitably uplift their communities. So, in other states, the issue has been made against the saloon as an evil against the home, as a menace to the general welfare, as an institution with only a technical right to existence. In Kentucky, where at least a hundred million dollars is invested in distilleries, these arguments have so outweighed the logical crippling of "a great industry" that most of the state is now "dry" and the wholesalers are making a desperate effort to so reform saloons that a state prohibition law may be headed off.

There are now but nine states and territories in the Union where the saloon is master of the situation. While about one-half of the country is "dry," the sale of liquor is absolutely prohibited in only five states, as follows:

Maine — the pioneer prohibition state.
Kansas — from which even the "blind tigers" have recently been cleared out.
North Dakota — where even liquor advertisements in newspapers are prohibited.
Oklahoma — which entered the Union as a prohibition state.
Georgia — whose law, just gone into effect, was precipitated by the Atlanta riots.

Most of the remaining states have local option laws, and one by one the counties and towns are abolishing the saloons. The present status of prohibition is now about as follows:

The liquor belt is hemmed in on the west by the three Pacific Coast states:

Washington — 50 "dry" towns.
Oregon — 12 "dry" counties and 170 "dry" towns in the 21 remaining counties.
California — 4 "dry" counties and many "dry" towns.

Between the liquor belt and the Mississippi River — a region which includes three of the "dry" states, North Dakota, Kansas, and Oklahoma — the anti-saloon sentiment is particularly strong:

South Dakota — one-fourth "dry."
Nebraska — 400 "dry" towns.
Minnesota — 123 "dry" towns.
Iowa — 65 "dry" counties; 34 "wet," all of which have but one saloon each.
Missouri — 44 "dry" counties, 71 "wet."
Arkansas — 58 "dry" counties, 17 "wet."
Louisiana — 65 per cent. of its area is "dry."
Texas — 147 counties "dry," 53 partly "dry," 47 "wet"; no liquor in dining-cars.

Between the Great Lakes and the Ohio River the sentiment varies:

Wisconsin — 708 "dry" towns.
Michigan — 1 "dry" county; towns may not vote on local option as municipalities.
Illinois — 8 counties and 600 towns "dry."
Indiana — 680 "dry" townships out of 1,016; two judges have declared saloon licenses unconstitutional.
Ohio — 1,140 "dry" townships out of 1,376; 60 per cent of towns "dry"; many "dry" districts in "wet" cities.

The Southern States have recently supported the Prohibition movement more vigorously than any other large region:

Kentucky — 97 "dry" counties, 18 partly "dry," 4 "wet."
Tennessee — entirely "dry" outside of Nashville, Memphis, and Chattanooga.
Mississippi — 68 "dry" counties, 9 "wet."
Alabama — entire state will be "dry" after Jan. 1, 1909.
Florida — 34 "dry" counties out of 47.
South Carolina — 17 "dry" counties out of 41.
North Carolina — 95 per cent "dry."
Virginia — 72 "dry" counties, 46 "wet."
West Virginia — 30 counties "dry" out of 55.
Maryland — 14 "dry" counties, 9 "wet."
Delaware — about 50 per cent. "dry."

The anti-saloon element is very strong in the East, particularly in New England:

Pennsylvania — temperance sentiment weak.
New Jersey — the only "wet" state east of the Rockies.
New York — 602 towns "dry" or partly "dry"; New York City "wet."
Connecticut — 96 "dry" towns out of 176.
Massachusetts — 250 "dry" towns, 100 "wet."
Vermont — 24 towns "wet."
Rhode Island — one-half "dry."
New Hampshire — 60 per cent. "dry."
Maine — constitutionally "dry."

One of the interesting phases of this movement is the awakening of the distillers and

brewers to the fact that the most dangerous enemies of their "industry" are the keepers of disreputable dives and saloons. The Wholesale Liquor Dealers' Association of New York proposes that the laws be so changed that the saloon business shall be conducted by "men of recognized character and standing in the community." But in New York City a test of strength would probably show that the disreputable retailers have more legislative influence than the wholesalers; and in places where the prohibition sentiment is strong a saloon-keeper of "recognized character and standing in the community" will soon be an impossibility.

AMERICA'S SECOND NOBEL PRIZE

FOR the second time an American has been selected to receive one of the five annual Nobel prizes. Last year it was President Roosevelt, to whom the distinction came in recognition of his good offices in helping Japan and Russia to come to peace. This year it is Professor Albert A. Michelson, of the University of Chicago, to whom the prize is given for remarkable achievements in physics, particularly in determining the velocity of light.

This year's award for "the most distinguished work in the field of idealistic tendency" in literature goes to Mr. Kipling. Professor Buchner, of the University of Berlin, receives the chemistry prize (which was erroneously announced as having gone to Sir William Crookes, of England). Dr. Laveron of Paris, whose researches in tropical diseases have been of far-reaching importance, was awarded the prize in medicine. The peace prize for this year was divided between Signor Moneta of Italy and Professor Louis Renault of Paris. Each of these prizes amounts to about $40,000.

Professor Michelson, the winner of the physics prize, is of German birth and was formerly an officer in the United States Navy. Since 1892 he has been in charge of the department of physics of the University of Chicago. His most remarkable work has been in devising instruments of precision by which measurements of almost incredible smallness of variation may be determined. For example, every schoolboy is taught that the world's standard unit of length is the metre bar in Paris, which is one ten-millionth part of the earth's quadrant. But it has been found that the irregularity of the earth's surface called for a different form of measurement — and it was Professor Michelson who went to Paris and measured the bar with his "inferometer," which registers variations down to one part in ten million. He has invented another instrument, the "echelon spectroscope," by means of which physicists have announced that it is possible to "ascertain the movements of the electrons inside the atom"— a feat beside which ordinary microscopic work appears grossly mechanical.

Forty Nobel prizes have now been distributed since the endowment was established by the inventor of dynamite. The nationalities of the prizemen are as follows: French 8, English 7, German 7, Dutch 3, Scandinavian 3, Swiss 3, American 2, Russian 2, Italian 2, Spanish 2, Austrian 1.

PRODIGIOUS EDUCATIONAL WORK — AND ITS RESULTS

BIG totals of statistics serve chiefly to confuse the mind, because they conceal the all-important unit, which is usually an individual. Yet the big totals of the report of the United States Commissioner of Education are impressive in spite of their magnitude. For instance, 400 millions of dollars were spent in the United States in 1906 for education in schools. The reports, especially of private educational work, are necessarily incomplete, and the total spent for school work would almost certainly reach 500 millions if it could be ascertained. Of this more than 300 millions were spent on the public schools; about 45 millions on universities, colleges, and schools of technology. The other kinds of schools run thus in the order of their expenditure:

Private schools	21	millions
Schools for the defective	7½	"
Normal schools	6¾	"
Reformatory schools	5⅓	"
Professional schools	3	"
Commercial schools	3	"

In the public schools and colleges there were about 20 million pupils — one out of every four of the population.

Perhaps the most significant of these big items is the expenditure for normal schools, which was more than twice as great as the expenditure for all other sorts of professional instruction. The value of any school is, of course, so directly dependent on the skill and character of its teachers that the training of

teachers is almost the most important form of all this educational activity. While we have not schools enough, nor schools well enough equipped, our chief need is not so much of more schools as of better teachers — of more good teachers. It is significant, too, that "commercial" schools stand as high in the list of expenditures as professional schools of all other sorts. These were once nearly all mere schools of penmanship, typewriting and stenography, and the like; but the range of studies now embraced under the general heading of "commercial schools" is fast coming to be very much wider.

What a significant omission — that there is no item of trade schools! There are not enough of them to form a class in such a general summary.

The meaning of all these vast totals is that we give an enormous volume of activity to the training of the young. Such sums of money were never before spent for such a purpose in any country. The task that they indicate is the need of directing this immeasurable quantity of energy to the best ends — to the very best training that can be given in the world, and to those kinds of training of which we have especial need.

The present mood in the United States is a mood of prodigious educational activity, as these figures signify. School expenditures, inadequate as they are, are increasing in almost all kinds of work and in all parts of the country. But there is neither a professional nor a public feeling that we are solving all our most pressing educational problems, as the Germans, for instance, in a large way solved theirs during the period of their educational revival. There seems to be no general agreement that all or nearly all of our educational work is so directed as best to prepare the mass of American children and youth for the life and the opportunities that await them.

NEARLY HALF A MILLION A DAY IN PUBLIC BENEFACTIONS

LAST year was the most notable in our history for large gifts to public and charitable uses. The record that is kept by the Chicago *Record-Herald* of such published gifts shows that their total was nearly 150 million dollars. This sum includes Mr. Rockefeller's unmatched gift of 32 millions at one time to the General Education Board for the promotion of higher education, his gifts to Chicago University, to the Rockefeller Institute for Medical Research in New York (which is richly justifying his munificence by the discovery of a cure for meningitis and by other most hopeful investigations), as well as many more benefactions. It includes Mrs. Russell Sage's 10 millions to the Sage Foundation for Social Service, and other gifts by her. It includes nearly 9 millions additional to the original 10 millions by Mr. Carnegie to the Carnegie Institution, and about 4 millions from him for other purposes; and it includes the late Miss Jeanes's bequests to charity and her million-dollar fund for primary Negro education. Thus 70 millions were given during the year for educational purposes only; 22 millions for museums, art galleries, and the like, including Mr. Widener's great donation to the art museum in Philadelphia. Eight millions were given for hospitals and asylums, and a larger sum to charities of many sorts. It is noteworthy that large gifts for public purposes were made by several men in the West, hitherto not known to the general public, such as Mr. Creighton, of Omaha, and Mr. Proctor, of Peoria, Ill.

When one year brings such great published donations as these, we may be sure that there were many millions more given in smaller sums. With such a growing habit of giving, it is a little difficult to believe that the accumulation of wealth is dangerous to our institutions. Much of the property of the rich flows back in a single generation into channels of public help; and larger sums so flow in our country than in any other, and in our time than ever before.

THE LINGERING OF A MEDIÆVAL STANDARD

THE contestants for athletic honors in our colleges are required to reach a certain grade in scholarship; but the contestants for honors in scholarship as a rule have no physical requirements made of them. The prizes for scholarship may be given to pale and underfed "grinds." Dr. D. A. Sargent, the director of the Harvard gymnasium, recently made this difference a cause of complaint against the colleges. The notable thing about such a criticism is that it should, in this broad daylight of physical knowledge, be necessary to make it at all. A pale, stooping, flat-chested, soft lad ought not to receive honors of any sort from an American college; for, without enough physical training to keep

him erect and to give his body the normal strength, no lad can truly be educated. In a most serious sense he is mistrained.

The worst of the continued toleration of mere book work by underfed and under-exercised youths is that many of them, unable to win success in the more active world, become teachers and finally members of college faculties, and perpetuate the same type of scholars. As Dr. Sargent expressed it:

"Competition is to-day the arch-enemy of all true culture, mental as well as physical. See how it effects the scholarship men and athletes in our colleges and universities. Harvard offers at the present time about $100,000 annually in some three or four hundred scholarships ranging in value from $150 to $500 each. Any student in need of financial assistance may apply for one of these scholarships, provided he has no physical, mental, or moral weakness, and gives promise of future usefulness. After a student receives a scholarship he is advised to consult the director of the gymnasium in regard to his health; but the factor over all others that determines whether a given student shall receive a scholarship is not health or physical vigor, but his mental standing according to the rank book of the faculty. . . . In answer to the question which I usually put to scholarship men, as to their reasons for not giving more attention to their physical improvement — the almost invariable answer is — 'I haven't time.' Back of this reply, however, the careful observer may read in their sad but determined faces the dread uncertainty and constantly harrowing fear lest while they take time for physical exercise, recreation, and enjoyment, their nearest rival may be at the everlasting grind that will land him a few points nearer the desired scholarship goal."

This is not education, whatever else it may be. The Greeks knew better than this thousands of years ago.

THE PAPER-MILLS' DESTRUCTION OF FORESTS

SINCE the supply of wood-pulp in the United States comes mainly from privately owned forests, there is nothing to prevent the paper-mills from spreading ruin over the tracts of land under their control. Young timber of such small size can be used for pulp that there is no chance for natural reforestation. An area as large as the state of Rhode Island is stripped of its spruce every year, and the regions bordering on the forests suffer the usual consequences that follow the destruction of all timber. The menace of the reckless cutting to the timber resources of North America is shown by the fact that the Paper Trust has acquired the timber rights to more than a million and a half acres in the province of Quebec. The Berlin Mills alone has registered timber limits for tracts aggregating about the same number of acres.

In the United States, spruce timber is the chief source of the wood-pulp which is made into paper, and there are no spruce forests west of New York except small tracts in West Virginia, Michigan, and Wisconsin. New York and the New England states are, therefore, most concerned in this ruthless economic waste that takes no thought for the needs of the future. In Maine all the timber townships accessible to large rivers have already been cut over. The Forestry Commission of New Hampshire estimates that, at the present rate of cutting, the entire forest resources of that state will disappear within from eight to twelve years. Vermont's supply of timber is already down to the point where it barely supplies the local demand. New York has wisely taken legislative steps to check timber destruction. On one tract of about 2½ million acres, no timber of any kind can be cut for twenty years. In 1894 the forests of the Adirondacks (about three-fourths of the spruce resources of the state) were set aside as a reserve. The latest step is the appropriation of 1½ million dollars to purchase additional forests for the state. Measures such as these are imperatively needed in every state where private corporations are rapidly destroying trees of any variety without providing for the growth of young trees to take the place of present forests.

THE FARMER AND THE FUTURE

A COMMITTEE of the National Educational Association is investigating rural public schools to find out the best work done by them, and what may be done for the better building up of country life. That is as important an inquiry as any body of men has in hand.

The problems of city life have by no means been solved, for they are the most grievous that civilization has to contend with. But they are at least formulated and, to a degree, understood. Some of them are in some cities intelligently attacked. But we have too easily taken it for granted that the course of rural life runs smoothly and continuously toward

betterment. The farmers — that is, the best of them — have been prosperous. We read much about the return of population from the city to the country. We have lately produced a large and most wholesome literature about out-door living and the freedom and the joy of rural life. But the return to the country is mainly of rich or well-to-do persons, persons of training who can lead pleasant lives anywhere; and we think of and boast of the farmer's prosperity chiefly in the big totals of the Government's crop reports. While the independence and the happiness of the farmers are real in many parts of the land and the level of their lives is constantly becoming higher in comfort and in intelligence, there is nothing drearier in all the modern world than the lives of lonely women and of untrained or mistrained children and of dull, plodding men in many country communities. The trolley and the telephone and the co-operative dairy are not yet within the reach of many millions of country folk. They yet know little, many yet know nothing, of improved methods of agriculture — they plant and reap as their fathers and their fathers' fathers did. Their children attend schools of long out-worn kinds where all that they learn gives them a desire for life in a town; and to the towns they go as soon as a chance comes, as unprepared for town life as for country life.

It will require a hundred years and perhaps more, as we are now going, for all the forces now at work to make farm life attractive, for the good influences now sporadically organized to reach all the people, or nearly all, or to stop the untrained rush to the towns.

In the meantime, there is no other single agency whereby all the people are reached that can have so great an influence as the public schools — public schools where the truth about American life as it is may be taught. Farming cannot be taught in the public schools, but a right view of life can be — such a right and balanced view of life as will lead to the building of rural activity on a sound economic basis.

The occupations of country people must be profitable, more profitable for the average man than the occupations of town folk. This is the economic bottom of the whole problem. When this becomes generally true, the flow of population from the country to the city will become normal.

But there must be other great forces set to work to make country work profitable besides the school — more direct agencies. The National Agricultural Department has done and is doing much. Many state departments of agriculture have done and are doing much. Some of the great agricultural schools, as in Minnesota, have done and are doing much. Some of the organizations of farmers have done and are doing much. Yet there are large sections of this big task that remain untouched. Rural life and rural work are not organized as town life and town work have been organized. Perhaps they can never be so completely and compactly organized.

But the great economic change that is taking place in Ireland, under the leadership of Sir Horace Plunkett, is suggestive. There the rural population is poor. It had a long period of discontent made desperate at times by famine and always made worse by political conditions and agitation. Yet this dense population on a poor soil is undergoing such economic organization as to promise a revolution in method and in efficiency. Cooperation is taking the place of grievance as an Irish exercise and occupation. The difference between a man whose business pays and a man whose business does not pay is immeasurable. In Denmark, too, there is such an admirable system of rural organization, of coöperation, and of instruction that all the world may learn lessons from that country.

This happy condition is within the reach of the rural population of the United States — that over our broad area, most of which is productive and much of which is richly productive, the people shall be taught such methods of work as to get the full scientific results of labor; that the whole industry of tilling the soil, with its kindred and dependent industries, shall be so organized that the producer shall get the profit — that all the benefits which commercial organization and machinery have brought to city life shall be brought also to rural life and that rural occupations may become sufficiently profitable for rural life to become glad.

For all time to come, the majority of the people of the United States will get their living from the soil. Getting a living from the soil is now a scientific and profitable pursuit for those who know best how to do it — those who take advantage of all the new knowledge. As the number of such

persons increases and better and better methods are used, and especially as better and better management is used, the profits and the joys of country life will grow. Organization will take the place of wasteful individual work. The intellectual life will be cultivated. The time dreamed of by poets and philosophers will come — may come — throughout the great fertile stretches of our country; and it would come within a remarkably short time if all the forces now at work for it could be coördinated and directed right. A great common movement toward such an end would take rank as the most important work in our land, perhaps the most important in the whole world.

FLIES AS CARRIERS OF DISEASE

TO reduce the deaths by typhoid fever in New York City from 650 to 360 annually, the deaths by diarrhœal diseases from 7,000 to 2,000, and to prevent 50,000 other cases of sickness every year — and to accomplish all this by simple methods of sanitation — is what a committee of the Merchants' Association of New York proposes in a recommendation to Governor Hughes.

The recommendation is based upon a series of exhaustive investigations made last summer into the relation between house-flies and the spread of intestinal diseases. This committee was headed by Mr. Edwin Hatch, Jr., and Mr. J. Pierpont Morgan. Its report, recently published, will be recognized by the medical profession as a contribution of value to the entire country. It shows, for example, that:

"the deaths from intestinal diseases rose above the normal at the same time at which the flies became prevalent; culminated at the same high point; and fell off with slight lag at the time of the gradual falling off of the prevalence of the insects."

Also, that even the secondary prevalence of flies in September is yearly reflected in the death-rate.

But the committee does not base its conclusions merely on these observations. Fly-traps were then placed all over the city and the flies collected daily were counted and examined. Most of them were found to be covered with bacteria of various kinds. On one specimen were counted more than 100,000 bacteria; "he had been walking over human excreta and was on his way to the nearest milk-pitcher."

The transmission of typhoid fever by means of flies is not a new discovery, but the mosquito's part in spreading malaria has received more attention from the general public. Since there are approximately 150 deaths in New York City from intestinal diseases to every death from malaria, the committee suggests that "the ominous buzzing in the pantry is more to be dreaded than the high-keyed note of the mosquito in the sleeping-room above."

SHALL ONE BUY STOCKS BECAUSE THEY ARE LOW?

THE financial record of 1907 is probably the strongest possible argument in favor of the most conservative, as opposed to the more speculative, forms of investment. Although last year saw disaster and panic, there was no default in the interest of bonds issued by important railroads or industrials and properly secured by mortgages.

The first week or so of 1908 saw the Seaboard Air Line in the hands of receivers, it is true, but the indications are that even in that case the old bonds will get their regular interest as it falls due.

The mere recital of this fact, emphasized as it has been by the many dividends omitted, by dividends on stocks paid in scrip, by default in many forms, should answer the oft-repeated question: "Why should I buy bonds that give me only 5 per cent. when I can get good stocks to yield 7 per cent.?"

The general lesson of 1907 appears to be that the man or the woman who desires absolute safety, and must have that above all chance of gain, will find his or her proper field for investment among mortgage bonds, mortgages, and other evidences of debt well secured. The record, analyzed in some detail, contains

direct warnings in great volume against the purchase of mining or industrial stocks as permanent investments. Even the stocks of railroads and traction companies are not immune from danger. If one may draw a conclusion with regard to such stocks from the data in hand, the conclusion would be that the really conservative investor will take them only in relatively small quantities.

It is a hard lesson, for the higher profits of stocks are always alluring, and the return from good bonds or mortgages is frequently very low. To-day this excuse has lost its force to some extent, for more than 5 per cent. on bonds may be obtained with perfect safety; but, in general, the investor frets because he cannot get more than 4½ or 5 per cent., while his neighbor talks to him of the 10, 20, sometimes 100 per cent. profit made in a single year in mining stocks.

Yet, during the ten weeks ending December 15, 1907, more than a dozen large mining companies either reduced or omitted dividends. The list includes such companies as the Anaconda and the Amalgamated Copper. In the purely industrial field, five companies of importance either reduced or omitted dividends, or went into bankruptcy. Three large public utility concerns stopped dividends. The Western Union and the Atlantic Coast Line Railroad declared dividends in scrip. The Chicago Great Western Railroad ceased paying interest on its debenture bonds.

Individually, the most distressing incidents of the period were the declines in Western Union and the Atlantic Coast Line, and the temporary collapse of the Westinghouse Electric. Western Union stock has been considered for a quarter of a century one of the standard stocks. It has been "planted" safely in the little strong boxes of widows and orphans from ocean to ocean. Relatively, it is the most widely distributed industrial stock in the country, and is held by more of the "innocent-investor" class than any other industrial, or perhaps any other stock. The circumstances that have hit it so hard come close to being a national disaster.

The Atlantic Coast Line is one of the good railroads of the South. Hundreds of men and women who live in its territory have held it as a safe, sound, conservative investment. The effect of its decline in revenues and in prestige is acutely felt in the same section of the country that was so severely hurt by the Seaboard Air Line collapse of four years ago, and by the cutting of the Southern Railway preferred dividend last summer. The Southern investor, it may be remarked in passing, is paying a good stiff price for his anti-railroad crusade.

A year ago, the Westinghouse Electric stood near the head of the list of our manufacturing stocks. Investors bought it as "gilt-edge" at prices near $180 per share. It seemed beyond the reach of disaster in any form. Its statements of earnings were alluring. Its business crowded its enormous plants. Its 10 per cent. dividends invited the most implicit confidence. To-day, as I write, the stock is selling below $50 per share, and the company rests in the hands of receivers. In the long run, it will come back; but many a small holder of its stock passed a sad Christmas in contemplation of his depleted fortune.

The story of the mining stocks and the method of their distribution is no new thing to the reader of THE WORLD'S WORK. Just a year ago, in the midst of a wild boom in the very stocks that to-day lie in disaster, I wrote this paragraph, and published it in the face of the severest criticism:

> "The small investor should by no means purchase mining stocks. These stocks are to be regarded as utterly unfit for the investment of savings. We shall make no exception to this statement. It applies with almost equal vital significance to the stocks of the Anaconda, Calumet & Hecla, and Amalgamated Copper as to the thousand new glittering, alluring prospects that parade themselves day by day in the advertising columns of the press."

Of the three representative stocks selected for illustration in this statement, the Anaconda and the Amalgamated have reduced dividends, and their stocks have suffered a collapse almost unparalleled in financial history.

It would be a sad thing to go through the state of Massachusetts to day and reckon up the number of old men and old women who are living in poverty this year because the copper companies have cut their dividends, or omitted them entirely. Boston is the centre of the copper-stock industry. Massachusetts is the market. One may not guess how many little homes are mortgaged this year to make up the deficiency in "copper" dividends, for more than half of the $12,000,000 or so of reduction in dividends during that

ten-weeks period fell upon the holders of copper stocks.

Recently this magazine received a letter from a woman who had lost money in a bank failure. She wanted to "make it up," by buying some stock that would "double in a year," as her neighbor had once done. She wanted the name of the stock. The editor declined to guess, on the ground that if the guess turned out badly he would have done her an irreparable injury; while, if it turned out well, he would have given to her the belief that such investment is fit for such an investor — a touch of the gambling mania, perhaps. In the end, the result could be only bad. Almost inevitably it would ultimately result in additional loss, probably in ruin.

Now, there are occasions upon which the editor will give advice concerning stock investments, even for the most conservative. Sometimes, it is absolutely essential to the investor that he or she get 7 per cent., or an even larger return, on the investment. In such a case caution must be urged; yet even the widow or the orphan may be advised to purchase some good, quiet, preferred stock of an industrial, or the stock of a railroad. There are industrials that have been seasoned by the storms of past years. There are railroad stocks to-day to yield close to 7 per cent. with what one must call safety. Yet, in selecting such investments, any man may make a mistake. Danger is part of the price one must pay for larger revenue.

In buying bonds, one must also exercise the nicest discrimination. It has frequently been urged upon the readers of these articles that in the purchase of street railway, public utility, telephone, and industrial bonds they rely only upon the very best of banking houses. It is timely to repeat that warning. Indiscriminate purchases of such bonds will lead to loss, almost inevitably. There are hundreds of street railway and power company and public utility bonds now offered throughout the country, frequently in the communities where the companies operate, at high prices, and under circumstances that in many cases come close to swindling. Local bankers, far from being a safeguard to prevent such gutting of the investment community, are too apt to aid and abet the process, tempted sometimes by accounts opened; lured, I regret to say, too often by profits to be made by themselves through the flotation of the bonds or stocks.

The nicest care must be used, particularly to-day, when danger lurks in the securities of every company not fully equipped to withstand a business depression. Buy telephone bonds from specialists in telephone bonds, firms, at that, of established reputation, wide experience, and known integrity. Buy traction bonds in the same way, and only in that way. You may find your banker in New York, Boston, Philadelphia, Pittsburgh, Cleveland, St. Louis, Chicago — even in smaller cities. But be sure you find him. You cannot get certainty and security in small traction, telephone, or industrial bonds without him.

As to dividends declared in scrip, one must reserve judgment until normal money conditions return. To pay one dividend in this way, merely because the actual cash is unobtainable by reason of extraordinary conditions, is not at all open to criticism. To continue to pay scrip dividends would be an investment crime. If the Atlantic Coast Line cannot pay cash dividends at the time of the next declaration, it should not pay any dividend, even though by such omission its bonds would cease to be legal investments for Connecticut savings banks. Practically the same applies to the Western Union, the Erie Railroad, and others. Regular dividends should be in cash or nothing.

If the study of industrial stocks over this period does not persuade the average reader to the extremest caution in making investments in industrial stocks, even the best of them, nothing in this world will persuade him except actual experience, and the unfortunate thing about experience is that when a man has had it he generally has no money to profit by it.

The contrary, the balancing fact if one may call it so, is the fact that the good securities bought by the general public during the three months of disturbance will almost certainly show increases in value as time goes on. The reports tell us that the number of stockholders in the standard railroads has increased by 50 per cent. or more in the past year. The number of bondholders is not reported, but here, too, there has been large increase. More and more, as the natural market forces have been allowed to work out their natural ends, the public has come to own the corporations. That is a good thing, both for the people and the corporations.

PEKING UNIVERSITY—AN AMERICAN "LIGHT OF ASIA"
It enrolled last year about as many students as Amherst or West Point

AMERICAN TEACHING AROUND THE WORLD

THE VAST INTELLECTUAL EMPIRE OF GOVERNMENT TEACHERS AND PROTESTANT MISSIONARIES WORKING UNDER MANY FLAGS

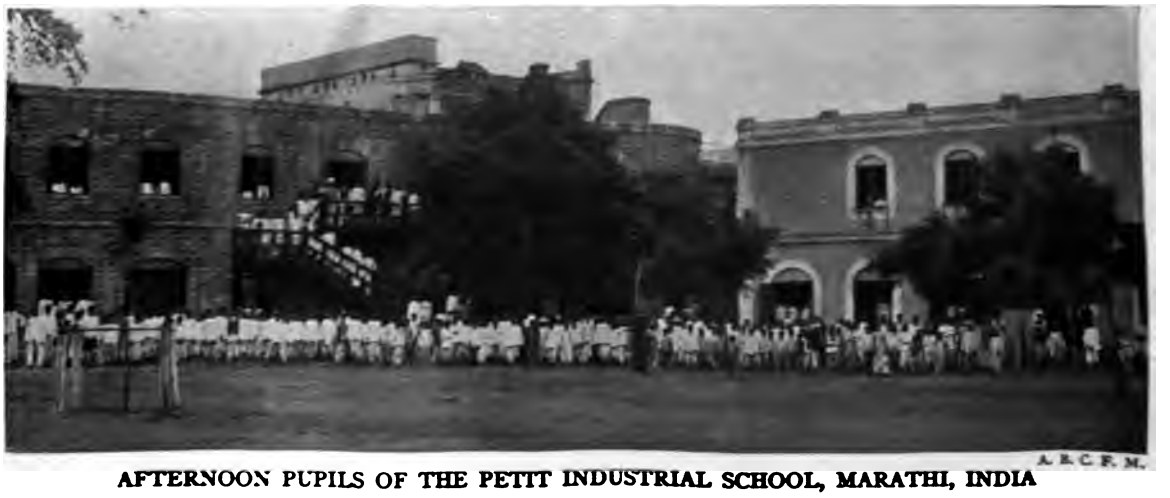
BY

EDGAR ALLEN FORBES

THE poet who loudest and best sings the glories of the English has outlined their over-seas policy in this way:

"They terribly carpet the earth with dead, and before their cannon cool
They walk unarmed by twos and threes to call the living to school."

It was Egypt that Mr. Kipling had in mind, and the founding of Gordon College at Khartum was his inspiration. He did not consider it worth while to say that Kitchener's army (which did the "carpeting") marched past more than a hundred American schools before it reached the junction of the Blue and the White Nile. United States soldiers have never strewn Egypt with dead, but our mission teachers have called more of its living to



AFTERNOON PUPILS OF THE PETIT INDUSTRIAL SCHOOL, MARATHI, INDIA
Built by a Parsee but directed by American Congregationalists. Its industrial course was introduced by a former student of the Chicago Manual Training School

U. P. Bd.

THE FACULTY OF ASSIUT COLLEGE, EGYPT

U. P. Bd.

THE FRESHMAN CLASS, ASSIUT COLLEGE

school than even Lord Cromer did in his long and constructive reign. When an American poet comes whose soul shall be moved by great achievements, we also shall have some brave singing and the American teacher as an educational empire-builder will be one of his themes. While we await his coming, hear the story in prose.

If a man in quest of material for an American educational exhibit were to sail out of San Francisco Bay with a phonograph recorder, he would come up on the other side at Sandy Hook with a polyglot collection of records that would give the people of the United States a new conception of their part in the world's advance toward light. His audience might hear a spelling-class recite in the tuneful Hawaiian tongue or listen to Moros, Tagalogs, and Igorrotes reading from the same McGuffey's Reader. A change of records might bring the sound of little Japanese reciting geography, or of Chinese repeating the multiplication table in a dozen dialects. Another record would tell in quaint Siamese the difference

A. B. C. F. M.

THE GREEK FOOTBALL TEAM OF AN AMERICAN COLLEGE IN TURKEY

At Marsovan, 350 miles east of Constantinople

between a transitive and an intransitive verb, or conjugate the verb "to be" in any one of the languages of India. One might hear a professor from Pennsylvania lecturing on anatomy to a class of young men in the ancient kingdom of Darius; or a young woman from Massachusetts explaining the mysteries of an eclipse to a group of girls in Constantinople; or a Princeton man telling in Arabic the relation between a major and a minor premise. Manual training teachers would recognize the sound of hammer and plane from the headwaters of the Nile and of the Euphrates, the ring of an anvil on the southern slopes of the Himalayas, or the hum of a circular saw on the Congo or the Niger. And, when the audience had listened to all this and "My Country, 'tis of Thee" in Esquimaux and in Spanish, the exhibit of American teaching would have only begun.

THE PUBLIC SCHOOL AT KIVALINA, ALASKA

SCHOOLS AT AMERICAN OUTPOSTS

In the September number of this magazine it was shown that in nine years the Americans have not only more than doubled the number of schools in Porto Rico: we have pushed out the Porto Rican's horizon and opened up new vistas of life. We have not made such a transformation in the Hawaiians, for the simple reason that when they came under the American flag their percentage of literacy was almost as good as ours. They were a nation of educated men and women, with colleges and seminaries and industrial schools, and with primary schools scattered all over the Hawaiian group. But all this machinery of civilization had been installed and kept in motion for three-quarters of a century by American teachers, after all; for the American Board of Missions began its work there in 1820. The public school at Lahainaluna began as a mission school more than seventy years ago, and most of the higher institutions—such as Oahu College, the oldest college west of the Rockies—had similar beginnings. One American woman, Miss Ogden, trained more than a thousand Hawaiian girls for lives of usefulness, and did her work

U. P. Bd.

AN AMERICAN MISSION SCHOOL IN THE ANGLO-EGYPTIAN SUDAN

At Doleib Hill, on the Sobat River, 500 miles beyond Khartum

POINT BARROW, ON THE ARCTIC CIRCLE

OPPOSITE SHEPHEARD'S HOTEL, CAIRO

A PROVINCIAL SCHOOL IN THE PHILIPPINES

A GIRLS' SCHOOL IN SOUTH AFRICA

A HIGH SCHOOL IN HONOLULU

A GIRLS' COLLEGE IN FOOCHOW, CHINA

BAPTIST SEMINARY, HAMBURG, GERMANY

GORDON MISSION COLLEGE, INDIA

AMERICAN SCHOOLS AROUND THE WORLD

RANGOON BAPTIST COLLEGE, BURMA

ON THE SITE OF ANCIENT THEBES

AT TARSUS, THE BIRTHPLACE OF PAUL

URUMIA COLLEGE, IN PERSIA

AT THE HEADWATERS OF THE EUPHRATES

A PRESBYTERIAN SCHOOL IN LAOS

"BY THE OLD MOULMEIN PAGODA"

A GIRLS' SCHOOL, BEIRUT, SYRIA

AMERICAN SCHOOLS AROUND THE WORLD

as earnestly as if she had foreseen that these girls would become the mothers of a generation of American citizens.

In the public and private schools of Hawaii to-day there are more than 20,000 children—Hawaiians, Portuguese, Japanese, Chinese, Americans, Porto Ricans, Germans, British, Scandinavians, and other nationalities. There are two school buildings that cost nearly $50,000 each and an agricultural and industrial college is projected. That the training is practical and progressive under the American régime is shown by the Royal School in Honolulu. It is organized as a "school city," with a mayor, a board of aldermen, and regular municipal departments. Police court is held daily, with Toyoichi Nakamura as judge and Sam Smith as county-attorney. Sheriff Henry Aki reports the following arrests during one week in September: Fighting, 6; disobedience, 3; truancy, 2; playing in line, 11; stealing, 2; smoking, 2. The reports of the "chief sanitary inspector" and of the "superintendent of public works" seem to show that the offenders worked out their sentences on what corresponds to the municipal rock-pile.

Alaska is another territory where the missionary teacher preceded the public school. The northernmost school in America—Point Barrow, on the Arctic Ocean—is the outgrowth of a mission station. Dr. Sheldon Jackson, for more than twenty years in charge of education in Alaska, is a Presbyterian minister; and the superintendent of the northern schools, Mr. W. T. Lopp, whose district has a thousand miles of Arctic coast-line, was formerly a missionary. He has a medal of honor from Congress in recognition of conspicuous heroism.

When Alaska was purchased from Russia, in 1867, the natives around Point Barrow were so wild and lawless that shipwrecked sailors preferred to trust the mercy of the frozen sea. In the 'eighties an American army officer in charge of a polar station at Barrow found it expedient to build a turret and fortify it with cannon. But the mission teachers brought about such a transformation that when eight whaling ships were wrecked off the coast in the 'nineties, the rescue of 400 American seamen was made possible by a generous sacrifice on the part of these natives, who gave up their only reindeer herd. Irrigating streams are not more vital to the Western deserts than

M. E. Bd.

ON THE EASTERN COAST OF SOUTH AMERICA
Pupils and teachers of Montevideo Academy, Uruguay

are reindeer to northern Alaska, yet Congress could not see this until Dr. Jackson had gone out among his friends and raised the $2,000 necessary to make the first experiment. Curiously enough, reindeer breeding is now a branch of the Bureau of Education, and the reindeer is the main dependence of the natives for food and transportation.

During the year ended last June, fifty-two public and many mission schools were maintained in Alaska, industrial training receiving the emphasis. For the present year the appropriation has been doubled. The new school-houses now being erected in isolated districts have a new feature—a hospital ward in which the teacher will be physician and nurse. There is probably no region anywhere in the world where such a large demand is made upon the devotion and courage and physical endurance of school-teachers.

M. E. Bd.

ON THE WESTERN COAST OF SOUTH AMERICA

Girls' Department of Iquique English College, in Chile

EDUCATING FILIPINOS OUT OF SAVAGERY

The Philippines brought to us a series of educational problems entirely different from those of any other new possession. Statesmen and others who are disgruntled over American rule will find the annual school reports little suited for their campaign documents. The thundering echoes of Manila Bay had scarcely died away before our army officers had the Manila school-bells ringing; and before the machinery of insular government was in place, Dr. F. W. Atkinson had laid out a system of public instruction such as no colony ever had before. To organize and conduct the schools until a supply of native teachers could be trained, and then to act as supervisors of districts, he made an appeal for the best teachers that the United States could furnish. The transport *Thomas* sailed in the summer of 1901 with 500 trained young men and women. Never in the history of colonial government was such another cargo sent to sea.

These and the other American teachers did a peculiarly difficult work and did it so well that a commanding-general estimated the restraining influence of fifty teachers in a

A. B. C. F. M.

JAPANESE GIRLS EDUCATED BY AMERICANS AT KOBÉ COLLEGE

Of 164 graduates up to 1900, 100 had volunteered for Christian service among their own people. The College has helped to raise the status of women throughout Japan

Presb. Bd.

THE AMERICAN SCHOOL FOR BOYS, TEHERAN, PERSIA

The young men educated in the mission schools have had a large part in the awakening of the decadent empire. Many of them have become physicians, teachers, officials, and leaders in business

A. B. C. F. M.

LAYING THE CORNER-STONE OF AN AMERICAN COLLEGE, MARATHI, INDIA

A. B. M. U.

THE ARRIVAL OF A NEW STUDENT AT DUNCAN BAPTIST ACADEMY, TOKIO, JAPAN

disaffected province to be equal to that of a regiment of troops. They were much more than teachers: they were the exponents of Western civilization. Scattered by ones and twos throughout the archipelago—among Tagalogs, Igorrotes, Negritos, and Moros—they lived in huts, ate native food, and braved the ladrone's spear and the pestilence that walked in darkness. In some districts they were postmasters and foresters and weather observers as well as teachers. When cholera closed his school, the teacher became the village health-officer and nurse. When local discontent swelled to the point of revolt, the teacher was

PROFESSORS AND STUDENTS OF BETHEL THEOLOGICAL SEMINARY, STOCKHOLM, SWEDEN

This institution is a part of the educational work of American Baptists

A. B. C. F. M.
CLASS OF 1900, INTERNATIONAL INSTITUTE, MADRID

M. E. Bd.
CLASS OF 1905, GIRLS' SCHOOL, PEKING, CHINA

the tribal counsellor and an unofficial member of the Peace Tribunal.

Briefly told in figures, here is the story of the American teacher in the Philippines. In the early period, from 1901 to 1904, the average expenditure for school purposes was $1,279,680 a year, with many natives teaching without pay. Furniture and books by the

A. B. C. F. M.
CLASS OF 1904, AMERICAN COLLEGE FOR GIRLS, CONSTANTINOPLE
One graduate of this college is the only Mohammedan woman in the Turkish Empire with the degree of B. A.

shipload were sent out from the United States and distributed among the schools—22,500 desks and 268,000 textbooks and 350,000 slate pencils in a single year, 1902. During that year 806 American teachers and 2,625 natives were teaching in 1,835 schools. The report for the following year showed an attendance of more than 180,000 children in the day schools alone. In March, 1905, it reached half a million. At the present time, without any increase in the American force, about 5,000 native teachers are at work. The Insular Normal School, with a large faculty and a fine equipment, is turning out trained teachers at a rate that keeps the statistician busy revising his figures. The higher industrial schools are doing a work just as remarkable and as far-reaching in influence. No attempt is made to give the figures, for agricultural and manual training is being introduced into even the primary schools so rapidly that figures are out of date when they come from the cable. As a part of this great campaign, which will in a few years lift the Filipino out of the ranks of the savage tribes, scores of the most capable young men and women are being educated in American colleges. The doings of the United States sailor and soldier in the Philippines once caused us as a nation to turn handsprings of delight; it is now the teacher's turn.

Even the Island of Guam, one of the loneliest outposts in the Pacific, has made the acquaintance of the school-teacher as well as of the marine. Too small for a regular governor—it is only thirty-two miles long by seven wide—it is in charge of an officer of the navy. Up to 1904, Guam was practically without schools. On May 16th of that year Commander Dyer arrived; on June 13th he "opened school" with a marine and two clerks as teachers. The report for 1907 shows 1,601 pupils, with agricultural, industrial, and night schools. Since nobody ever goes to Guam except on detailed duty and since few of its people will ever see any other island or country,

Presb. Bd.

THE MEMORIAL SCHOOL, TABRIZ, PERSIA
Erected by Mrs. Wm. Thaw, of Pittsburgh

U. P. Ed.

AMERICAN EDUCATION FOR THE FUTURE MOTHERS OF INDIA
The Girls' Boarding School at Sialkot, of high-school grade

U. B. Bd.

AN AMERICAN INDUSTRIAL HOME FOR GIRLS, PASRUR INDIA

A cotton-spinning class at work. Most of these girls were brought from the famine district

the teacher's work is directed mainly to the practical branches. But Guam is none the less a part of our educational empire.

So much for the school-teacher in our own possessions. When to this work is added that of more than half a million teachers in the colleges and professional and common schools of the United States, the grand total will represent the American teacher's work under the Stars and Stripes. But that is only a part of the story.

No record of American teaching can pretend

Presb. Bd.

FIELD-DAY AT THE SYRIAN PROTESTANT COLLEGE, BEIRUT

It has 15 buildings, 68 eminent instructors, and nearly 1,000 students. English is the language of instruction

ROBERT COLLEGE, CONSTANTINOPLE, OVERLOOKING THE BOSPHORUS

Founded by Dr. Cyrus Hamlin in 1863, it has led the educational movement of a large part of the Oriental world

to anything like completeness unless it includes the work of American missionaries, for the same kind of foundation teaching is going on throughout Asia, Africa, and the Pacific islands that was done in Alaska and Hawaii a generation ago. The missionary as the herald of a new faith concerns chiefly the churches that send him forth, but his ministry to human suffering and his influence as a world-wide educator concern all who take pride in

STUDENTS OF FIFTEEN NATIONALITIES IN ROBERT COLLEGE

Beginning at the left, front row: American, Egyptian, Scotch, Turkish, Russian, Georgian, Israelite. Second row: Greek, Austrian, Polish, Dalmatian. Third row: Armenian, Canadian, English, Bulgarian

A. B. M. U.

CONGO INDUSTRIAL STUDENTS AND SOME HARDWOOD FURNITURE MADE BY THEM AT IKOKO

American achievement. The missionary teacher is not represented in the National Teachers' Association, nor are his reports to be found in the bulky volumes annually issued from Washington, yet no teachers anywhere are doing more to "reclaim by culture vast areas in the mental life of the world." Some of them—like Dr. W. A. P. Martin, of Peking—have witnessed the transformation of an empire, partly as the result of their own work.

If the different flags that float over mission schools taught by men and women from the United States were brought together, there would be enough to "dress" a battleship. The nearest approach to a complete summary of these schools is that compiled in 1902 by Dr. James S. Dennis. It shows that more than a million pupils are yearly enrolled in Protestant schools in foreign lands, and that the number of American schools is almost as great as that of all the rest of the world combined.

In the Chinese Empire, the American's call

KIND OF SCHOOL	SUPPORTED BY	
	UNITED STATES	OTHER COUNTRIES
Universities and colleges	47	47
Theological and training schools	152	223
High schools and seminaries	370	509
Industrial institutions	58	121
Medical colleges and nurses' schools	30	37
Kindergarten schools	93	29
Elementary and day schools	8,000	10,000

**The Baptist Missionary Magazine* for March, 1906, reports 8,638 American schools, as follows: American Baptists, 1,753; Southern Baptists, 79; American Board, 1,633; Methodists, 1,929; Southern Methodists, 112; Presbyterians, 932; Southern Presbyterians, 51; Disciples of Christ, 36.

A. B. M. U.

MISSIONARIES OF THE UPPER CONGO PUSHING FARTHER INTO THE INTERIOR

The American Baptist steamer *Goodwill* leaving Bopoto with workers to establish a new station

to school was first heard nearly three-quarters of a century ago. Samuel R. Brown, of Monson, Mass.—who entered Yale with six and a half cents and worked his way through—opened a school at Macao and transferred it to Hong Kong as soon as foreigners were permitted to enter "the open door." On his return to America he brought three of his schoolboys, the first Chinese to be educated in this country. To what degree the "awakening of China"—so often credited to the cannon of the little brown men on the other side of the Yellow Sea—is in reality due to the American school-bell may be inferred from the following compact facts. In China there are at least 175 missionary institutions for advanced education. Of those enumerated by Dr. Dennis, the Americans conduct all of the thirteen colleges and universities, two-thirds of about seventy theological and training schools, six of the seven industrial schools, five of the six kindergarten schools, and more than half of the thirty-two medical colleges.

Peking University, the pride and glory of American Methodists, is one of the best educational institutions east of Suez. Since 1890 it has been virtually independent but it is incorporated under the laws of New York. About 500 students are annually enrolled in its five departments, most of them being students from the north of China. Its medical course—five years of nine months each—is more thorough than that of most of the medical schools of the United States. Nanking University, the Anglo-Chinese College at Foo-

U. F. Bd.

AN AMERICAN SCHOOL ON A MUD-WALL IN INDIA

This village teacher has conducted the school for seven years, on a salary of $32 a year

PROBABLY THE YOUNGEST AMERICAN TEACHERS IN SERVICE

All of these teach in the Pagbilaran district in the Philippines. Ten draw salaries; the little fellows teach without pay

A. B. C. F. M.

AN ASTRONOMY CLASS IN CHARGE OF A NATIVE PROFESSOR, FOOCHOW COLLEGE

A. B. M. U.

CARPENTRY SHOP, JARO INDUSTRIAL SCHOOL, IN THE PHILIPPINES

chow, Soochow University, and colleges at Chentu and Kiukiang are also supported and directed by the American Methodists.

St. John's College at Shanghai is another university of high rank. Its graduates can enter the leading schools of law, medicine, and divinity in the United States, and those with the B. A. degree can enter the course at Yale that leads to the M. A. and Ph. D. degrees. Since its beginning as a small boarding-school about the middle of last century, it has educated many young men who have become leaders in the business life of the metropolis of China. In connection with its medical department, it conducts one of the best-equipped hospitals in the empire.

In Hangchow, a city in North China as large as Boston and Buffalo combined, the American Presbyterians have a college with about a hundred students. Its Chinese superintendent had charge of the Hangchow exhibits at the St. Louis and Belgian Expositions, yet he serves the college at a salary of $600 a year. Shantung University is another Presbyterian institution, conducted in coöperation with the English Baptists. The collegiate department at Wei Hsien (formerly Tengchow College) reported in 1898 that twelve of its graduates had become professors in the Imperial University at Peking. Christian College at Canton, though an independent organization, coöperates with the Presbyterian Board.

The Congregationalists have three important colleges. At Tung-cho, a city near Peking with a population nearly as large as that of Washington, is North China College, which began in 1867 with two pupils. During the Boxer outbreak, many of its most influential graduates met death; the buildings were demolished down to the last brick and the campus was turned into a cornfield. This was in the summer of 1900, yet the college was ready for students in the fall of the same year. At Foochow College, which has about 150 students, the sons of the rich and of the poor are brought together in class-room and dormitory. The graduating class of 1906 took a long step forward by writing their orations in simple, direct language, instead of using the stilted phraseology common to the literati. The

M. E. Bd.

MUSIC CLASS, NANKING UNIVERSITY, CHINA

M. E. Bd.

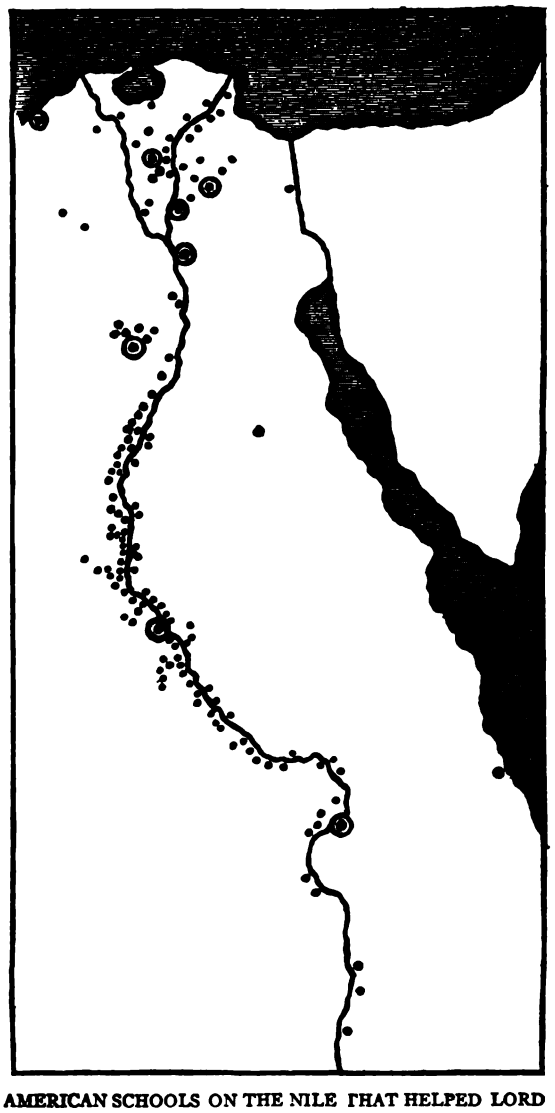
COOKING CLASS, CONCEPCION COLLEGE, CHILE

American Board has also a college for girls in the same city, and many of its graduates have taken courses in medicine and nursing. There is perhaps no other course which now offers to an ambitious Chinese girl such a wide opportunity for usefulness.

These are the principal missionary colleges that have been to China all and more than all that Harvard and Yale and Princeton and Vassar have been to America. Their graduates have gone back to their homes with a new vision, with a new conception of a world stretching away from China in all directions and of a universe of whose vastness the wisest of their fathers never dreamed. But—and it is here that the American's theory differs from that of his English brother—the transformation of barbarism is not wrought by high schools and colleges but by the common school. The elementary training of the 42,000 children taught yearly by the missionaries in China from Hong Kong to the Chinese wall and from Shanghai to the border of Tibet is a constructive influence that reaches farther and deeper than the education of the more than 5,000 students in the missionary colleges. To the fertile soil of the most populous country in the world, the American has transplanted the idea that education is for all the people—coolie as well as mandarin, girl as well as boy. In another generation, perhaps, the leaders of China will have forgotten that their nation ever thought otherwise

Japan has already forgotten it. Japanese instructors are in charge of many of the new government schools of China, and Japanese schools are furnishing Western learning to more than 15,000 visiting Chinese students. Yet it was an American, Dr. David Murray, to whom was committed the task of making Japan a land of universal education when the Mikado issued his edict to the effect "that there may not be a village with an ignorant family, or a family with an ignorant member." The conspicuous service rendered by many American professors in Japanese colleges is well known, but the humbler part which the American missionary teacher had in the regeneration of Japan is often overlooked.

Take, for example, the Anglo-Japanese College of the Methodists, located at Tokyo. A list of its graduates who in 1900 were helping to make the new Japan included five professors in the Imperial University, five physicians, six editors, fifteen army and navy officers, twenty-one ministers, twenty-three government officials, fifty-six teachers, and many others in professional pursuits. The Doshisha, a great Japanese university founded at Tokyo by the Rev. Dr. Neesima, has been from the beginning (except in name) an institution of the American



AMERICAN SCHOOLS ON THE NILE THAT HELPED LORD CROMER TO MAKE A NEW EGYPT

The dots represent mission schools; the circles show high schools and colleges. Assiut is the centre of this educational work

Board. It now has more than fifty instructors, most of them Japanese, and more than 5,000 students have received instruction within its walls. Among its graduates are 161 teachers, 148 merchants, 93 ministers, 34 bankers, 19 journalists, and 28 government officials. Of 148 graduates from the girls' department, 23 are

teachers and 108 subsequently graduated from schools for nurses. Kobé College for Women, with six American and twelve Japanese instructors and seven buildings, is another American Board school. Of the group of graduates shown in the illustration on page 9858, practically every one has become an uplifting influence in her community and an enrichment to the life of the empire. The Episcopalians have a college in Tokyo, the Reformed Church has one at Nagasaki and another at Sendai, the Methodists have three—Tokyo, Nagoya, and Kobé—and the Presbyterians conduct a college in Tokyo in conjunction with the Reformed Church.

All of the missionary colleges and universities in Japan listed by Dr. Dennis in 1902 were American institutions, and there are nearly a hundred other American schools above the grade of day schools. The importance of the educational work done by men and women from the United States is shown by a statement made in 1903 by Dr. W. E. Griffis, an authority on things Japanese: "Nine-tenths of the modern educated men and women of Japan before 1890, and a majority of those in influence and office to-day, received their first instruction from American missionaries."

The first school for higher education in Korea was established by the Methodists at Seoul in 1886. The emperor gave it a name which means "Hall for Rearing Useful Men." The Presbyterians have an excellent school at Pyeng Yang, and these two denominations are now joining their forces throughout the country. The Methodist Board reported in 1907, 2 high schools and 54 elementary schools, with 1,600 pupils; the Presbyterian Board now reports more than 8,000 pupils.

AMERICANS IN SOUTHERN ASIA

Between China and Burma lies Siam, where the American Presbyterians have done exceptionally good work. The relation between the missionaries and the Government has probably been more intimate than in any other country, partly because the father of the present king was tutored by a missionary of the American Board. The superintendent of public instruction, who is also principal of the Royal College, is a Presbyterian missionary, which is also true of the superintendent of the Royal Hospital and of the surgeon-general of the navy. The American high schools for boys and for girls in Bangkok are centres of wide usefulness. Half of the pupils in the girls' school are from the nobility, five of them being princesses. The governor of the province in which Bangkok is situated is a graduate of the boys' school, and it is said that there is scarcely a business house in Bangkok in which one of its graduates is not to be found. One of the Siamese commissioners told the American teachers that he would take at sight for Government service all the boys that they could educate.

Among the Laos people farther north, the Presbyterians are practically the only educational influence. In addition to about twenty-five day schools, they have an important training school at Cheng-Mai ("a month and a half by boat" north of Bangkok) and an industrial school at Lakawn, several days' travel beyond Cheng-Mai. The Baptists are busily at work among other races in the same region.

West of Siam is Burma, the largest province of India, with forty distinct races dwelling in a territory as large as New England, the Middle States, Ohio, and Indiana combined. This field is occupied principally by the Baptists, with about 700 schools of all grades. Rangoon Baptist College, with more than a thousand pupils and with a constituency of 638 mission schools, is affiliated with the University of Calcutta. This college is one of the strongest forces for good in that part of the British Empire. One of its graduates is head-master of the Burman Boys' School at Moulmein, and the first Burman girl to take university work is from the same college. One of the brightest graduates of a smaller mission school was lost sight of by her teachers for several years. Eventually, while on a tour through the jungle, they found her in an obscure village with a school of her own. A feature of the mission training given to the Karens (one of the low-caste peoples) is voice culture. A traveler from Boston heard "The Messiah" sung by a Karen chorus and declared that their rendition of the oratorio was almost equal to that of the Handel and Haydn Society.

In Assam, a province as large as the state of New York, bordering on Tibet, the American Baptists have nearly 200 schools and more than 4,000 pupils. One of these highland boys was brought to the United States and placed in Syracuse University. After his entrance examination a professor said that the young man from the Garo Hills knew more Greek than some of the students that had come

from Chicago after three or four years' study of the language.

In the other provinces of India the same kind of educational work has long been in progress. The mission schools of all the Protestant boards are teaching more than a million pupils every year—about one-fourth as many as are in all the Government schools—and the Americans have a large share in the work. England's educational policy in this part of its empire is not a theme for poets. The importance of American teaching will be seen when it is remembered that in 1901, after a long period of British rule, the census disclosed an illiterate population of about 277 millions. Of 17 million girls of school age, only about 400,000 were in school.

The American missionaries are conducting in India about ten colleges, thirty-five training schools, more than fifty high schools and seminaries, three medical colleges, fifteen industrial schools, and about the same number of kindergartens. Yet in a sixteen-page pamphlet on "Education in India" issued by the United States Bureau of Education, there is not a single reference to any of them. But Lord Curzon and other British officials in India have recognized the importance of the work. The Governor-General of Bengal said publicly that he had found after investigating that the best boys among the candidates for government services came from the mission schools.

The Methodists have a boys' college at Calcutta and two colleges at Lucknow. The institution for girls, which is affiliated with Allahabad University, is said to be the first Christian college for women founded in Asia. The Baptists have an excellent college at Ongole, the Lutherans at Guntur, and the Reformed Church at Vellore. Gordon Mission College, a United Presbyterian institution up in the Punjab, has about 1,200 boys in all departments. At Madura, which was a capital city in the days of Xenophon and which is now the second city in southern India, the American Board college has trained 300 teachers and preachers; its graduates are instructors in twelve Indian colleges. Forman Christian College, conducted by the Presbyterians at Lahore, has about 400 students. A great many of the smaller schools and seminaries scattered over the empire would rank as "colleges" in the United States. Jaffna College, on the island of Ceylon, was founded by Americans so long ago as 1824.

The training in the industrial schools is of a high order. The Baptists, for instance, have a machine-shop at Bassein in which fifteen steel steamers have been built. The Petit Industrial School of the American Board at Ahmednagar has advanced courses in carpentry, rug-making, hammered metal work, and many other hand-crafts. One of its carpets won the gold medal at the largest industrial exhibition ever held in India. It represented the work of ten small boys for more than a year, yet not a flaw was found in it. The fame of the graduates of this school became so great that in 1898 a company was organized in London for the sole purpose of employing boys and girls trained in this school.

AMERICANS IN WESTERN ASIA

In Persia the missionary education is chiefly in the hands of the American Presbyterians with Urumia College as a centre. This institution was started in a cellar in 1836. Fiske Seminary, also at Urumia, is the leading school for girls. All in all, the Presbyterians have about 150 schools in Persia, with important boarding schools in Teheran, Tabriz, and Hamadan.

On the western side of Asia are many American colleges, some of which have an international reputation. Robert College, Constantinople, occupies twenty-three acres of American territory overlooking the Bosphorus, near the site of the bridge over which Darius led the Persian army into Scythia, and facing the castle built by Mohammed the Conqueror in the year that Columbus discovered America. Beside the college walls run the telegraph wires to Bagdad and India. The college was founded during our Civil War, at a time when there was not another college in the Turkish Empire. The idea originated with two Yale students—the sons of Dr. Dwight, a missionary at Constantinople—but the founder was Dr. Cyrus Hamlin, then of the American Board. Mr. Robert, for whom the college was named, was a New York merchant and treasurer of a home mission society; he gave $400,000 for the buildings. The institution is independent but is incorporated under the laws of New York, and its three leading trustees must be American citizens. Opening in 1863 with four students, it had graduated (up to 1904) 450 students with the degree of A. B., but 2,575 young men had spent at least three years in its class-rooms. So many

nationalities are represented (a group of fifteen is shown in one of the illustrations) that eleven languages are taught, with more or less instruction in several others. English, however, is the language of the college. Of 409 students enrolled in 1907, there were 229 Greeks, 85 Armenians, and 39 Bulgarians. Robert College has been the leader in education throughout a large part of Asia, and the influence of its students has been felt even in the Czar's council-chamber at St. Petersburg. It is interesting to note that the two delegates from Bulgaria to the Hague Conference were graduates of this college.

Under the direction of the Congregationalists, there are eight other American colleges in the Turkish Empire. Central Turkey College, at Aintab, has graduated twenty-seven classes. At the headwaters of the Euphrates, rising above the crowded houses of Harpoot, is Euphrates College, with about 1,000 students. The nearest institution of its kind is the college at Aintab, nine days' journey to the southeast; there is another at Marsovan, eleven days' journey to the northwest. There is none northward to the Black Sea, nor eastward to the Persian and Russian frontiers. Anatolia College at Marsovan, 350 miles east of Constantinople, has a field of 80,000 square miles. South of the Cilician Gates of Asia Minor is St. Paul's Institute, at Tarsus, the birthplace of the Apostle Paul. It was founded chiefly through the generosity of Colonel E. F. Shepard, of New York, and the sister of Chief-Justice Brewer is a member of its faculty. One of its graduates is a business partner of King Menelek, of Abyssinia. At Smyrna, a city with a population as large as that of Cincinnati, is the International College, with more than 300 students. At Samokov, ten miles from the troubled frontier between Bulgaria and Macedonia, is the Collegiate and Theological Institute.

The American Board has also two schools for the higher education of Turkish girls. At Constantinople, on the Asiatic side of the Bosphorus, overlooking the Marmora, the Golden Horn, and the mosques and minarets of old Stamboul, is the American College for Girls, with nearly 200 students. A feature of their college life is the presentation of some of the old Greek plays in their original language. One of its graduates, now the wife of a professor in the Imperial University, is the only Mohammedan woman in the Turkish Empire to receive the degree of A. B. Central Turkey Girls' College is at Marash, a city of 50,000 people 110 miles northeast of Tarsus. Turkish is the language of the students but their text-books are in English. In addition to these advanced institutions, the American Board has more than fifty boarding and high schools, and more than 400 elementary schools.

The Syrian Protestant College in Beirut is another great outpost of American civilization and is "one of the noblest Christian colleges in the world." It is an independent corporation and Mr. Morris K. Jesup of New York is president of its board of trustees. It has seven departments, fifteen buildings, a faculty of sixty-eight instructors, and enrolled 878 students in 1907. Their classification was as follows: Preparatory, 515; collegiate, 189; medical, 102; pharmacy, 27; nursing, 6; commercial, 38; biblical archæology, 1. The roll of its alumni includes the names of hundreds of men who have distinguished themselves in the East, and it shows that a very large part of the reconstructive work of the English in Egypt was in the hands of subordinates trained in this American university.

But there are many Americans outside of Beirut who are doing a remarkable educational work in Syria. The Presbyterians have more than a hundred schools, with approximately 5,000 pupils, and many of the schools are of high grade. From their two seminaries for girls—one at Beirut the other at Sidon—have gone 300 young women to teach in the schools of Syria, Palestine, and Egypt. Gerard Institute, at Sidon, is sending out a large number of boys with industrial training.

AMERICAN TEACHING IN AFRICA

The most remarkable American educational work in the Dark Continent is that of the United Presbyterians in Egypt. The map on page 9867, showing American schools on both sides of the Nile nearly all the way to the Sudan, tells a surprising story. More than 15,000 students were taught in these schools during 1906—and Dr. Charles R. Watson says that there were only 18,000 in the Government schools that year. Assiut College, the centre of this educational work, has been called "the hope of Egypt" by President Angell, of the University of Michigan; Mr. John R. Mott, after a tour of the colleges of all countries, says that this is "one of the most strategic, most efficient, and most fruitful institutions in

all the world." It enrolls about 700 students annually and has trained a whole generation of useful men. More than 4,000 have there received instruction, and its graduates fill important positions from Cairo to Khartum.

Of not less importance is the work of educating the women of Egypt. The Americans have girls' schools at Cairo, Luxor, and Assiut, with an enrolment of nearly 1,000, representing different races and religions. The Cairo school is opposite Shepheard's Hotel, known to all tourists; and that at Luxor, the site of ancient Thebes, is on the tourist road to Karnak. From one of these girls' colleges an Indian prince selected a peasant girl as his wife, and was so pleased that he gave the school a generous contribution every year as long as she lived.

The United Presbyterians have also extended their work far into the Sudan. There are Arabic schools at Khartum, Omdurman, Khartum North, and Halfa; and 500 miles further inland, at Doleib Hill, a graduate of the Iowa Agricultural College is training the Negroes of the Sudan.

In those parts of Africa where the dawn is just beginning to break, most of the American schools are of elementary grade. The most important group is that of the American Baptists on the Congo, where nearly 8,000 pupils are receiving practical instruction in about 250 schools. Several other missionary societies are also at work along the same river. To the north, in the French Congo and German Kamerun, the Presbyterians have about sixteen schools in the Gaboon region. The Methodists have about thirty schools in Liberia, with a college at Monrovia; and half a dozen other societies have stations in Sierra Leone. In Portuguese West Africa, south of the Congo, the Congregationalists have about twenty schools, and the Methodists are also at work in Portuguese Angola. On the east coast the American Board has a few schools in Central Africa and about seventy among the Zulus of Natal. The Methodists are in Rhodesia and Portuguese East Africa, and there are a number of schools in other regions.

AMERICANS IN LATIN AMERICA

In the countries of Latin America, which is much nearer home and where the percentage of illiteracy is very high, comparatively little educational work has been done by the missionaries, but the explanation is to be found in the fact that it is not easy to get Catholic children into Protestant schools. There are approximately 160 American mission schools in Mexico, including about 25 colleges and high schools, chiefly in charge of the Methodists and the Presbyterians. Practically no work of this kind has been done in Central America, but the missionaries are on both sides of the continent to the south. Of perhaps fifty American institutions for higher education, the chief is Mackenzie College, at Sao Paulo, Brazil. It is probably the best college in South America and has educated many of the most influential men of Brazil. It is affiliated with a number of the colleges of the United States. In addition to the activities of the missionary educators, Americans have influenced education in South America in other ways. In Argentina, for instance, about sixty American teachers have at various times been in charge of the Government's normal schools. Dr. Harrington, a Methodist missionary in Bolivia, conducted a boys' school in La Paz so successfully that the Bolivian Government asked him to take charge of public instruction in the district of Oruro and gave him a large appropriation with which to organize the work.

Scattered here and there over the world—in Singapore, the Caroline Islands, Malaysia, and elsewhere—are other American schools, but the list is long enough. Even in Europe they are at work. The American Board conducts the International Institute for Girls in Madrid, and the Baptists have the direction of theological seminaries in Hamburg, Germany, and Stockholm, Sweden.

It is worth while to remember, in considering the work of these thousands of American schools, that, with the exception of the government schools mentioned in the beginning, this country receives not a dollar of tribute from any of the nations which reap the benefits of the training. And yet a distinguished French editor who recently visited the United States for the first time could see nothing but the passion of money-madness stamped upon our faces!

"What is the attitude of the Government at Washington toward your work?" I asked one of the leaders of this teaching army.

"Indifference and tolerance," he replied. "The Government sends out special agents to look for foreign trade and has warships to open foreign ports, if necessary, but they say that we have no business over there. We have nothing to sell."

THE PREVENTION OF POVERTY

THE RESULTS OF TWENTY-FIVE YEARS OF ORGANIZED WORK BY CHARITY ORGANIZATIONS TO ERADICATE AS WELL AS RELIEVE DISTRESS

BY

ARTHUR B. REEVE

A POOR woman, suffering terribly from consumption, with an anæmic, unkempt child, living in a tumbled-down lodging, was discovered in Philadelphia a couple of years ago. The brotherly love of a relief society furnished her with rent and groceries for many months, but the society at length appealed to organized charity for aid in taking care of the case. Her present needs having been provided for, the charity society began to look up the woman's references. Every one of them proved to be false and the relief society's officers then became disgusted.

"Wait until the investigation is over," cautioned the trained charity worker. A few days afterward, a chance remark by the little boy led to the discovery of the real story that had been hidden for two years. The feeble-minded mother had wandered from a well-to-do home in another city, taking with her the only child. The family had searched for them in vain. Within forty-eight hours after this clue had been disclosed the woman was back in her own home with a trained nurse, and the child was back at school. Which was the better neighbor, organized or unorganized charity?

There was once a poor wayfarer who fell among thieves on the road to Jericho. Charity, then in its childhood, bound up his wounds and carried him to an inn. To-day charity, in its maturity, does the same — and more. It polices and lights the Jericho road so that the wayfarer need not fall among thieves at all; it goes even deeper and seeks to find out and remedy the causes that make men thieves.

This is the so-called "new view" of charity. A new spirit of hopefulness has come into it. "Poverty," said a leader of charity recently, "is now believed to be a preventable disease —at least, in a large measure. The poor we have with us yet, millions of them; but there are those of us who believe that we have at last found a way which in the future will reduce poverty to its lowest terms; will perhaps even minimize the personal causes of poverty, such as thriftlessness, drunkenness, ignorance, and the like; will certainly minimize industrial causes such as lack of work, bad housing, disease, low standards of living. It is important to remedy the effects of poverty; but there is vastly more promise for the future in remedying the causes." This is the optimism at the close of the first quarter of a century of organized charity—back to the causes.

THE FEDERATION OF CHARITIES

Twenty-five years ago a small group of earnest men and women met together in New York to consider why it was that, with the hundreds and thousands of relief measures in the city, so little headway was made. They were asking themselves the same question that business men were asking at the same time, that laboring men had been asking for a couple of generations. The answer at which they arrived was the same as that of the business man and the laboring man. In place of waste and overlapping and destructive competition there must be economy, organization, and coöperation. The result of this and similar meetings elsewhere has been that there are to-day nearly 200 charity organization societies in the United States—to be exact, 197 in North America and 189 in foreign countries. Each is a sort of clearing-house in its own city for the various allied charitable societies, differing possibly in name but one in spirit and principles; if is a veritable "trust to abolish poverty."

What has charity organization actually accomplished? Has a quarter of a century of social service justified its existence? To quote its individual successes would make an interesting but interminable series of human documents. The great, concrete, quickly

grasped successes, however, have been of prevention, not of palliation. Let us take some of the more striking, more human achievements.

POVERTY A CURABLE CONDITION

Twenty-five years ago it was the current belief that poverty was permanent. To-day, in spite of all the social misery—perhaps increased social misery—that one sees on every hand, it is the belief that poverty is, to a great extent, curable. The old charity, charity that meant a dole to the poor by a sort of Lady Bountiful, has passed away. To-day the new charity is ushered in, charity that is nothing short of ultimate justice to the poor. As preventive medicine is to-day recognized as more important than pounds of curative medicine, so in charity the new view is that prevention far outranks palliation—always remembering that adequate relief is to poverty exactly what curative medicine is to disease.

A quarter of a century ago thousands of charitable societies were blindly endeavoring to cope single-handed with the poverty evil, each in its own little way. To-day they are uniting, strong in the new-found powers of organization and coöperation. From the same platforms, in a recent series of charity organization meetings, spoke Protestants, Roman Catholics, and Jews; Democrats and Republicans; representatives of every race and color; delegates from scores of associations, local, state, and national; expounders of every social theory, from individualism to socialism. The audience was composed of lawyers and physicians, clergymen and bankers, business men and scholars—nearly every conceivable occupation and profession. And not a jarring note was struck. Such a gathering would have been impossible a generation ago. Now, in the face of a common enemy, differences are obliterated.

For tangible achievements let us take New York as the best example—New York whose population in the Borough of Manhattan alone has doubled in a generation, while the greater city has more than doubled the area of the original city. Seven years ago New York was full of "old law" tenements with "air shafts" perhaps eighteen inches wide and closed at the bottom—dark, filthy, malodorous breeders of disease and vice. To-day, as a result of the tenement-house reform, begun and kept alive by the Charity Organization Society, one million people are housed in "new law" tenements; they are far from perfect as yet, but they have courts measuring feet where air-shafts measured inches, are open at the bottom as well as the top, with more air, more light, and better sanitation. The battle has only begun; congestion is fast crowding on the heels of reform, but the course is plain and there will be no retreat.

Ten years ago there was in New York no municipal lodging-house; homeless men and women slept on the floors and benches of police stations, or wherever they could. To-day, owing to the campaign of the Charity Organization Society, which maintained for years a privately supported free lodging-house, rather to demonstrate the need than to claim to satisfy it, the city has a clean, sanitary municipal lodging-house, the first of its kind in the United States, and a larger one is being erected.

In 1891 the first public bath-house was erected in New York, in answer to the insistent demand of the Association for Improving the Condition of the Poor, a society closely allied in joint work with organized charity. To-day there are eighteen public baths built or building by the city and various charitable societies. So with parks, playgrounds, recreation piers, all of which movements organized charity has helped along by means of committees or by the strong support of its individual members.

Five years ago tuberculosis was increasing throughout the country with ominous speed, and little organized effort was being made to check it. To-day the original Charity Organization Society's tuberculosis committee of New York has been duplicated by local committees in almost every city of the Union, with a great national organization sprung directly from it, national and local campaigns of education, popular lectures, traveling exhibits, instruction, and literature distributed by the million pieces. At last tuberculosis is "fluctuating" instead of showing uniform increase. As in the case of tenement houses, the way is plain; and as in the case of the lodging-house, the city has taken action to provide free sanatoria.

A dozen years ago there was but one savings bank in the whole of New York City that would accept a deposit of less than a dollar. To-day many do so; several department stores have taken up the idea, and the Penny Provident Fund, a charity organization activity which started this new trend in thrift, has annual deposits of $100,000, in small amounts, at its 300 branches. Every year it is graduating

its pupils in provident habits into the larger field of substantial deposits in regular savings institutions.

During the hard times of 1893 there was no place where the poor could borrow money except from the pawnbrokers, where the maximum legal rate of interest of 3 per cent. a month was the rule rather than the exception. If this winter proves to be the poor man's "hard times," there is the Provident Loan Association, an outgrowth of organized charity, which charges no more than 10 per cent. a year and is limited by its charter to 1 per cent a month. Last year it loaned some ten million dollars to the poor of New York. Best of all, it has by competition forced the pawnbrokers to reduce their rates.

The list of results could be expanded indefinitely, not only for New York but for every city where the charity organization idea has obtained a foothold and enables social work to assume proportions that make it really effective.

HOW ORGANIZED CHARITY DOES ITS WORK

Quite as interesting as the results obtained are the methods and machinery by which an organized charity does its work. Let us take, for example, the homeless man wandering the streets. Suppose he is directed to the Joint Application Bureau of the Charity Organization and the Society for Improving the Condition of the Poor. His story is the old one of a lost grip on life. His present distress must be relieved—but, more than that, he must get a new grip on things. First he is sent to the wood-yard. (The homeless woman is sent to the laundry.) After a "day's" work, which consists of three hours, he receives tickets for two meals and a clean lodging for the night. Not long ago one of the critics of this method complained that the wood-yard blistered his hands, but after a few questions he added: "Of course, you see that I am not used to working." If the man is not homeless he receives fifty cents instead of tickets. Later, in either case, he is given the addresses of a number of good employment agencies or of several employers of labor who happen to need men at that particular time. Naturally there are no sinecures given out—sinecures never get as far as employment agencies or application bureaus. The trouble with most homeless men is that they are unskilled laborers —and therein lies the tale of the great need of industrial education in America. But if a man makes an honest effort to find work, he can depend on the charity society to stick by him.

Sometimes, however, a man is unfit for ordinary work; he may be the victim of a dangerous trade, return to which means for him certain death. He may be a man physically or socially "handicapped." For him a Special Employment Bureau for the Handicapped is maintained, to add him as a fraction, if not as a unit, to the sum total of productive labor, instead of allowing him to become a zero or perhaps a minus quantity.

Thousands of cases, of course, do not come to the central bureaus but are taken up at the ten district offices in the city, each having a section under its charge with a population as great as the city of New Orleans. All cases are investigated and registered in a registration bureau. This, as well as the same work among the homeless, is the so-called "case work." It has been harshly criticized by its enemies and as warmly defended by its friends. Perhaps a better way to express it would be to soften the word "investigation"—it is merely the work of finding out the truth, as in the case of the woman suffering from consumption. "Case work" is absolutely necessary, for relief given in ignorance may be the worst possible thing. Then there is the statistical bureau, in which the experience in a hundred thousand cases in the past is made to contribute to the solution of the millions of the future. It is a sort of social clinic, as necessary to the charity worker as the medical clinic is to the doctor.

The most recent charity development in New York is the Department for the Improving of Social Conditions, which includes the three important committees on tenement houses, tuberculosis, and mendicancy. The work of the tenement-house committee has already been touched on. One of its greatest achievements last year was the killing of several bills in the state legislature that were surreptitiously introduced to nullify the advance of the last decade. The committee has already pointed out the graft into which the city's tenement-house department fell and has helped to reorganize the department.

Though Koch discovered the tubercle bacillus in 1882 and the city of New York did much to check the progress of consumption during the following years, it was not until 1902 that the really effectual way was found to educate the people to the dangers of the

"great white plague." That was when the tuberculosis committee was formed. Last year its popular exhibit was shown before 70,000 persons, and in the past five years lectures have been given to 150,000. About 60,000 of its famous "Don't" cards (beginning: "Don't give consumption to others! Don't let others give it to you!") were distributed, and the Board of Health is now engaged in distributing 400,000 more. Similar warnings go to each of the 600,000 school children of the city. By the courtesy of a large department store, which has the advertising rights, the backs of the street-car transfers are used on Sundays for tuberculosis warnings, thus reaching more than a million people once a week. Besides this preventive work, a great deal of actual relief work is being done for poor tuberculous patients. Among other things, the old Staten Island ferry-boat *Southfield* has been transformed into a free day-camp for consumptives who cannot afford to leave the city—the treatment being given at the surprisingly low cost of only thirty-seven cents a day for each patient that can be accommodated—an object lesson in the possibilities of such relief.

The mendicancy committee, one of the first activities of the society, was in a fair way to suppress street-begging when the present police commissioner, two years ago, saw fit to withdraw the detail of police from it. At once New York became again infested with "panhandlers," ingenious letter-writers, and mendicants of all sorts. But the city has already been educated in a great degree to the knowledge that the stray dime given in ignorance perpetuates the condition that it seeks to cure. The 8,000 records accumulated have also become an invaluable storehouse of information, and the work is now to educate the people to the evil of indiscriminate giving, rather than to suppress the mendicant himself.

It is not enough to better the living environment of the poor, nor to afford relief, nor even to secure work. Habits of thrift must also be inculcated, and this is the work of the committee on provident habits, with its Penny Provident Fund, already described, working through a stamp savings-card system. Moreover, crises in the lives of the poor must be tided over, and this is the work of the Provident Loan, now a separate institution.

It must have become evident to the reader by this time that organized charity has created a demand for an entirely new kind of skilled worker with the poor. Indeed, within the past decade, a new profession has come into existence—a large body of specialists thoroughly trained in the latest methods of coping with the problems of poverty. In 1898 the first course of summer-school training in "applied philanthropy" was begun in New York. Since then this temporary school has been endowed into a permanent undertaking with both winter and summer courses, and the idea has spread to other cities. Hundreds of young men and women have thus been educated for this new calling of social work in the New York School of Philanthropy, the Boston School for Social Workers, the Chicago Institute of Social Service, and the St. Louis School of Philanthropy. Here is a unique development of charity work. New York alone has turned out 600 trained workers.

There is also a library where social problems can be studied by the public, by the students in the schools, and by the volunteer workers, where the records of the past guide the future. One of the most recent additions to the New York school is a bureau of social research, which has been organized among the students for the express purpose of special study at first hand of social questions which have scarcely been dealt with before.

Moreover, a national publication committee has been formed and a weekly magazine is published—*Charities and the Commons.* Into this magazine have been merged several charity periodicals, making now a strong paper which goes to those interested in charity all over the country. Better than that, it is frequently quoted at length as an authority by newspapers and magazines, and thus widely extends its field. It is becoming the great American organ of social service movements, for scarcely a leader in such work can be named who is not a regular, and free, contributor to its success. Last year was added a regular press service to which the most noted social workers of the country also contributed articles, which are syndicated in newspapers throughout the United States—reaching two million readers every week. In every conceivable way effort is made to arouse the social conscience of America to its duties.

One of the great ideas contributed by New York has been the idea of a United Charities Building, where, under one roof, the headquarters of all these activities are centred.

The result is that in improving social conditions all are working in harmony and in close touch. So much has Berlin thought of the idea that it has adopted it from America and will soon house all its charitable activities under one roof.

An entirely new field is opened for organized charity in relief following disasters such as the *Slocum* disaster and the San Francisco earthquake and fire. It has been calculated that in the past thirty-six years in twenty-seven such great calamities—fires, earthquakes, floods, yellow-fever epidemics, droughts, hurricanes, cyclones, tidal waves, and shipwrecks—at least $25,000,000 has been contributed for relief. In every one of these cases, had organized charity been on the spot, the adequate machinery of relief and a small force would have been ready, while behind the local society would have stood the united societies of the country—a sort of first aid in case of disaster. Such was actually the case in the Park Place disaster in New York in 1891, the hard times of 1893, the coal scarcity of 1902, the Kansas, Missouri, and Oregon floods of 1903, the *Slocum* disaster of 1904, the Baltimore fire of the same year, and the San Francisco disaster of 1906. And, in the present winter, should hard times again strike the poor as they did in 1893, here is a powerful agency to meet them.

THE MEN WHO LEAD THE WORK

There are scores of great personalities in the movement. Although Buffalo antedated New York by a few years in organized charity, it has been the latter city which has led the way, and in it many great names stand forth. Above all should be mentioned Mrs. Josephine Shaw Lowell, more than any one else the founder of the society, and for twenty-three years, up to the week of her death, its constant servant—wise, sympathetic, ever eager to uplift humanity by patient labor. She died in 1905, leaving her work as her monument.

In all but five of the years of its history, one man has headed the New York Charity Organization Society—Mr. Robert W. de Forest. He it is of whom Dr. Emil Münsterberg, director of the Berlin public charities, said: "I have come to believe that Mr. de Forest is the true incarnation of American charity." As Tenement-House Commissioner in 1900, and chairman of the executive committee of the Sage foundation and its vice-president in 1907, as president recently of the National Conference of Charities and Correction and of the New York state conference, in scores of ways Mr. de Forest has indelibly stamped his impress on social service.

Dr. Edward T. Devine, the general secretary of the New York Charity Organization Society, the first director of the school of philanthropy, holds the chair of Social Economy at Columbia, endowed by Mr. Jacob H. Schiff, and was also the representative appointed by President Roosevelt to aid in the relief and rehabilitation of San Francisco. The present director of the school, Dr. Samuel McCune Lindsay, formerly of the University of Pennsylvania and secretary of the National Child Labor Committee, now holds the chair of Social Legislation at Columbia.

Outside of New York there are so many leaders that one scarcely knows where to end —Mr. Robert Treat Paine of Boston, who originated the famous phrase, "Not alms but a friend"; Dr. Jeffrey R. Brackett and Miss Zilpha D. Smith, of the Boston School for Social Workers; Miss Mary E. Richmond, the head and heart of the Philadelphia society; Mrs. John M. Glenn of Baltimore and Mr. John M. Glenn, formerly in the same city, who is now the director of the Sage Foundation; in Buffalo, Mr. Frederic Almy; in Chicago, Mr. Ernest P. Bicknell; Professor Graham Taylor, famous for his settlement, the "Commons"; Miss Jane Addams, famous for her work at Hull House; Professor Charles R. Henderson of the University of Chicago; and a host almost as large as that in New York.

Here we have, compressed, the record of a generation of achievement in social service. But more important than achievement, or machinery, or personalities, is the outcropping of the "new spirit" behind all. No one has "glimpsed" it better than Professor Simon N. Patten:

> "Our children's children may learn with amazement how we thought it a natural social phenomenon that men should die in their prime, leaving wives and children in terror of want; that accidents should make an army of maimed dependents, that there should not be enough houses for workers, and that epidemics should sweep away multitudes as autumn frosts sweep away summer insects. . . . And they will be unable to put themselves in our places, because the new social philosophy, which we are this moment framing, will have so moulded their minds that they can not return to the philosophy that moulds ours."

A PRACTICAL EXPERIMENT IN FLETCHERISM

HOW A PROFESSIONAL WOMAN WORKED OUT THE PROBLEMS OF SANER LIVING, AND RELIEVED HOUSEKEEPING OF ITS DRUDGERY

BY

FRANCES MAULE BJÖRKMAN

THERE were two things that I used to say I should never do. One of them was to get married and the other was to keep house. I had at an early age an overwhelming desire to go out into the world, to look out for myself and to earn my own living—and a correspondingly strong disinclination to stay at home, look out for other people, and work for board and clothes.

Two years ago I broke my first vow by taking a husband. Two months ago I broke my second by taking a flat. The results of these two hazardous experiments have been so unexpectedly gratifying, however, that I have resolved to set them down here for the benefit of the increasingly large number of women who feel as I did, that their lives were given to them for a larger purpose than cooking and cleaning and providing for the physical needs of another person. For their encouragement, I shall state at the outset that I am still earning my living at the occupation I have chosen and using my energies for the furtherance of my own individual aims and purposes. I have not given up my "career," and yet I am enjoying all the advantages of writing a "Mrs." before my name and all the comforts of a real home.

How I succeeded in combining personal freedom and independence with matrimony and domesticity is the matter herein set forth.

When my early belief that marriage was incompatible with personal liberty had been overcome, there still remained a strong conviction that independence and housekeeping could never go hand-in-hand. Therefore, before "naming the day," I established a distinct understanding that there was to be no background of pots and kettles to my new life. We made no preparations for setting up even a modest establishment. I merely moved my trunks up to my husband's bachelor apartments, and we started in to "bach it" together instead of separately.

It was great fun. We got our breakfasts on a chafing-dish and went out for our lunches and dinners. There was only one objection to the system: it cost us all that we both could earn. We were not extravagant, we cared nothing at all for the so-called luxuries of the table, we almost never dined in style—and yet, although we were both doing well financially at the time, we found ourselves at the end of every month without one penny to "put by." Our rent was extremely reasonable for the comforts we enjoyed—only $25—but we found that our bare living expenses ate up approximately $125 a month. As our light, heat and service were included in our rent, it will be seen that our food was costing us $100 a month, or something like $3 a day.

Now as we did not wish to spend our lives in laboring for just enough money to fill our stomachs and keep a roof over our heads, it was clearly necessary for us to make a change. This was easy to say and difficult to do. A boarding-house was out of the question, an apartment hotel too expensive, and housekeeping still presented a menacing front, bristling with brooms, frying-pans, and other devices for defrauding a woman with something to do of her valuable time.

OUR STAY AT HELICON HALL

Then came Mr. Upton Sinclair, with his project for establishing a coöperative home, and I thought that Providence had sent us our solution. I speak for myself alone; while my husband was lured on by my enthusiasm, the judgment of his maturer years and wider experience led him to feel somewhat apprehensive for the success of such a scheme.

However we went into it. For $16 a week we were each accommodated with a room and

three meals a day, to say nothing of the privileges of a swimming-pool, a billiard table, a bowling-alley, and the freedom of a beautiful park of nine acres. I think that no one who was connected with that ill-fated experiment will ever recall the life we led at Helicon Hall with anything but tenderness and regret, but I also think that there must now be few who look back upon it as a practical working solution for the domestic problem.

For a while we did live in freedom from concern for our material needs—but only for a while. Before long, in company with the rest of the members of the group, we found ourselves grappling with a set of coöperative cares and anxieties that made our little individual worries of the past seem like the veriest pin-pricks. It was the old story of the struggle of the idealist and innovator against the cold, hard facts of the established order. With every passing week we were presented with problems and difficulties that had not occurred to us to provide for in outlining our plan. We began to see all sorts of rocks and dangers ahead—and then one night a fire destroyed Helicon Hall and put an end to the whole scheme.

But then came the question of what we were to do next. One who has never found himself standing out in the snow with not one of his personal belongings left to him but his "nightie" can hardly realize the state of bewilderment and indecision that is induced by such an experience. Just because we were too dazed to think, we did the thing that was first suggested to us—we went to a boarding house.

A TRIAL OF THE BOARDING-HOUSE

The establishment was clean, comfortable, and well-managed. The meals were wholesome and good. Yet we were able to stay just two weeks. We had no complaint to make. The place was probably the flower of its kind. Absolutely the worst we could say of it was that it was a boarding-house. To us, however, this was more than sufficient reason for getting out of it. We moved into furnished rooms and once more began taking meals at restaurants.

But by this time the effects of the disaster had begun to make themselves felt. Our income had been materially reduced just before the fire because my husband—encouraged by the fact that we had a neat little nest-egg in the bank, that we were supplied with almost everything we needed to take us through the summer and that my earnings were enough to cover our regular running expenses—had left his position on a newspaper to write a long-projected book. The day after the fire the nest-egg was broken and well-nigh consumed by the purchase of two complete new outfits of clothing and an apparently endless list of "absolute necessities," beginning with toothbrushes and ending with typewriters. In the days that followed, my earnings were cut down to next to nothing by the fact that the shock of the disaster had temporarily deprived me of the power to work. My husband was prevented from turning his hand to money-getting because he was under contract to finish his book within a limited time.

Day after day I sat over my typewriter with a deadened brain, absolutely unable to frame one connected and logical sentence. Our little hoard in the bank dwindled alarmingly, and, helplessly, we had to watch it go. In our eating, as well as in everything else, we were practising what we regarded as the most rigid economy consistent with discretion, and yet the three meals which we were firmly convinced we had to have to keep in condition were costing us from $1 to $2 a day.

In the midst of this dilemma, a fortunate chance threw in our way the great apostle of reduced diet through complete mastication—Horace Fletcher. Mr. Fletcher told us that we not only did not need more than a third of the food which we were making such desperate efforts to get, but that we should actually be much better off without it. In support of his statement he related the amazing story of how, at the age of fifty-eight and after he had lived for ten years on about one-third of the food that physiological science has declared necessary for the maintenance of physical efficiency, he had doubled the best records of the best athletes at Yale, easily and without having previously undergone any physical training whatever. Furthermore, he told us how, during an endurance test made three years before, he had beaten the records made by the best men of the Yale boat-crew, while living on a diet of cereal and milk at a cost of exactly seven cents a day—this without imposing any artificial restraints upon his appetite and without practising anything like self-denial.

We were sufficiently impressed by his words to be willing to make the experiment. That very evening we began to "Fletcherize" and the next day our restaurant checks showed the

results. One trial of the system was enough to demonstrate to us that it was unquestionably true that a much smaller quantity of food was required to satisfy the appetite when it was masticated, à la Fletcher, to the point of extinction, than when it was merely "chewed thoroughly" in the ordinary manner. As the Fletcherizing process did not detract from the pleasure of eating, but rather added to it by heightening the flavor of almost every dish, we decided to keep on with it. The result was that within a week we had cut down our old-fashioned breakfast of cereal, eggs, rolls, and coffee to the last two items alone. Our other meals showed a corresponding decrease in quantity—particularly in the amount of meat, for which we both suddenly seemed to lose our taste.

At this point it occurred to us that, since we apparently neither wanted nor needed meat, we might be able to effect a very considerable reduction in our expenses by applying the breakfast system of our bachelor apartment days to the present situation and getting all our meals in our room. We bought a small portable "gas ring," a little saucepan, a twenty-five cent coffee percolator, two cups, saucers, plates, knives, forks, and spoons—and started in.

It is surprising how many good things it is possible to prepare in a single saucepan over a single gas flame. As a matter of scientific interest, we kept a record of what we had for our meals and as we carefully preserved our memoranda, I am able to give here a list:

TYPICAL BILLS OF FARE

SUNDAY.

Breakfast.
Rolls and coffee

Lunch.
Cereal and cream.
Grape-fruit

Dinner
Eggs scrambled in cream
Lettuce and cream salad
Corn muffins
Stewed rhubarb
Cracker and cheese

MONDAY.

Breakfast
Rolls and coffee

Lunch
Lettuce salad
Wheat muffins
Orange

Dinner
Bacon and egg
Stewed corn
Rolls
Fruit salad

TUESDAY.

Breakfast.
Cream toast and coffee

Lunch.
Strawberries and cream.
Corn muffins

Dinner
Poached eggs
Boiled onions
Cream pots
Banana and cream

WEDNESDAY.

Breakfast
Rolls and coffee

Lunch
Cream toast and coffee

Dinner
Veal cutlets
Potato and cucumber salad
Rolls
Stewed prunes

THURSDAY.

Breakfast.
Coffee alone.

Lunch.
Cream cheese and bar le duc jelly.
Crackers.

Dinner.
Eggs scrambled with onions and green peppers.
Combination salad.
Wheat muffins.
Stewed rhubarb.

FRIDAY.

Breakfast.
Coffee.

Lunch.
Cereal and cream.

Dinner.
Baked beans.
Stewed tomatoes.
Brown bread.
Fruit salad.

SATURDAY.

Breakfast.
Nothing.

Lunch.
Strawberries and cream.

Dinner.
New asparagus in cream.
Lettuce and cucumber salad
Rolls.
Stewed apples.

For two weeks I also kept an account of our expenditures for food and found that they amounted to $12.58, which made an average of less than ninety cents a day. This indicated a substantial saving. Moreover, as we had to buy in extremely small quantities which every housekeeper knows is the most wasteful and extravagant manner possible as I was absolutely without experience in the art of marketing, and as we were limited to such foods, cheap or expensive, as could be cooked in our single saucepan, it did more. It indicated possibilities in the way of economizing that seemed worth pursuing further.

But this implied a refrigerator, a real stove, and other domestic machinery. In a word, it implied housekeeping.

"But, after all, why not?" I said to myself. Our lunches were costing us less in time and trouble than they had formerly cost when we had to go out and get them at a restaurant. The preparation of our dinners was a genuine "lark." Taking the situation all in all, I had to admit that we had never been so free from the worry and fear of providing for our material needs since our marriage, and this in the face of the fact that we had to balance our own stove on a chair, wash our dishes in our hand basin, and keep our food in a wire cage under the drip of the faucet.

[illegible]

dollars a week, we calculated, amounted to more than $30 a month—and for $30 a month we had heard that one might rent, for the summer, extremely desirable furnished flats.

When we had reached this point I already saw myself, for the second time, a perjured woman. There was really nothing further to do but look for the flat. Accordingly, somewhat shamefacedly, but nevertheless with determination, I set out with my list of advertisements. Within a week the deed had been accomplished.

We have now been keeping house according to Fletcheristic principles for two months; and, as I stated at the beginning of this article, I am still doing my own chosen work and pursuing my own individual purposes. Furthermore, I am at present earning the living for us both, and I expect to continue to do so for a month or two because my husband is still busy with his book. We are more comfortable, more independent, and happier than we have ever been before, and—what is extremely to the point—we are in immensely better health. A chronic tendency toward nervous dyspepsia in my husband has entirely disappeared and I am so full of energy that I hardly know what to do with it.

To crown everything—never in my life have I enjoyed such long, uninterrupted stretches of work as I do now. I wake up of myself, perfectly refreshed, at 5.30 or 6 o'clock, bound out of bed without a thought for the supplementary morning "snooze" of the past, take a few gymnastic exercises or a run in the park to work off my superfluous steam, bathe, dress, and then—since there is no breakfast to cook—go direct to my desk.

About noon the Fletcheristic "earned appetite" begins to assert itself, and without breaking off my train of thought, I go into the kitchen, get out the fruit, cereal, and cream, and have my first meal. Sometimes my husband joins me—oftener not, because, as a rule, neither wishes to have the mind taken from the subject in hand at that time. Since there is nothing to spoil or to get cold if it is not eaten at once, and since my husband can get everything that he wants for himself, we are both free to break our fast when and how we please. After eating I usually sleep for five or ten minutes and then go back to work.

Toward six o'clock, when my brain is tired and I feel that I should enjoy doing something with my hands, I go into my kitchen for the second time during the day, and, for half an hour or so, amuse myself by getting up for our dinner one or two attractive and wholesome combinations of the good things of the earth—dishes not necessarily found in the cook-books but ones that any intelligent woman might very readily hit upon for herself if she applied her mind to the question of food as to any other abstract problem. As I do this only once a day and as we seldom have more than one or two cooked articles and never anything of a greasy, "smelly," "messy" nature—such as meat or fish—it never degenerates into drudgery. In fact, since I make a point of always trying new things, I find that each afternoon I enter into the business with the zest that attaches to an interesting game.

The other day I added up an account of our expenditures for food which I have been keeping for two weeks. It amounted to $6.13—an average of a fraction less than 45 cents a day and about half the amount of the test account that we kept for the same period in the early days of our experiment. Although in saying so I may lay myself open to the suspicion of indulging in the unconscious exaggeration of the enthusiast, I must add in justice to the great cause of Fletcherism that we are convinced that it reached this high figure only because we have not yet grasped the principles of economical buying.

Where this progressive economy will lead us we do not yet know, but, keeping constantly in mind the fate of the Irishman's horse, we are following it without fear or question. So long as we continue to improve in health and to gain in leisure, in comfort, and in freedom from care, we do not see why we should hesitate to do so.

I am fully aware that the solving of the domestic problem by reducing the quantity of their food and by eliminating some of their meals altogether, is a notion that will fail to appeal to very large numbers of people. On the other hand, I know that there must be some who are ready to welcome any sane system that promises them emancipation from the tyranny of the three inexorable meals a day. To these refined souls this article is addressed in the hope that it may lead them into the path that has taken us out of all our old troubles and perplexities.

THE DEFENDERS OF OUR SHORE-LINE

THE COAST DEFENSE ARTILLERY AND ITS REMARKABLE ACCURACY WITH GUNS WHICH HURL HALF-TON SHELLS OVER A DISTANCE OF EIGHT MILES

BY

FRANCIS JOHN DYER

TIMID persons who live within sight of the coast-line find themselves wondering, when speculations concerning the danger of war find expression in the public press, whether they might not be in peril if war should come and belligerent fleets should appear off the sea-coast of the United States. Fear of invasion is not so great as it was in earlier days nor is it so prevalent in this country as in lands across the seas.

The average citizen has no time to inquire into coast-defense problems. He knows that the nation is paying out a great deal of money every year for the army and navy and he assumes that the men whose vocation is war are earning their pay by looking after the nation's defenses. That there are fortifications around New York and at various other places on the seaboard he is well aware, but he has never been inside them. Still, the dogs of war may some day be unleashed, and then who so likely to feel their fangs as the people on the ocean frontages of the land? What would happen if New York were attacked? That is just what the average citizen cannot tell.

Suppose that a state of war were suddenly to be declared. Along the entire coast of the United States, officers and privates of the Signal Corps would go on patrol duty day and night. Scout-boats would be performing the same kind of picket-duty off-shore at the more important ports. At every fort powerful telescopes would continuously sweep the range of vision for any suspicious-looking craft, and in every wireless station the operators would be on the alert to catch the first whisperings of alarm. The sun would no sooner set than great searchlights would so light up the sea that not even a fishing-boat could hide from their glare.

AN IMAGINARY ATTACK

The news of the enemy's approach would probably come on a night when the clouds and fog favor an attack. The scout-boat flashes the signal; the lookout at the fort sounds the alarm; the word is quickly passed to the fire-commander, who immediately reports to the battery commander. (He may act independently in an emergency.) The bugler sounds "Assembly," and the men come rushing out of quarters, dressing as they run, and take up their positions at the guns. There are quick, sharp orders; the ammunition men rush powder and projectiles to the guns; the searchlights dart their beams here and there in an effort to penetrate the fog. The fire-commander is prepared for the issue. The gunners are at the sights.

Scarcely have the echoes of "the Assembly" died away before all the forts and batteries are in a state of readiness. The battle commander has reported to the artillery district-commander, who at once takes personal charge and by means of his telephone service is in touch with all portions of his command. While the scout-boats are ascertaining the exact location and number of the enemy, the mine commander sits in his little station, ready to touch the button that will explode any particular mine, or to pull the lever that will throw the current into all the mines at once so that they will explode whenever a ship touches one of them. The monitors, the submarines, and the other available coast-defense boats clear for action.

Outside, under cover of the fog, the enemy approaches in double, wedge-shaped formation, the heaviest battleships in the lead. Since the great, rifled cannon in the forts have a much longer effective range than the guns of a battleship, the admiral has determined to run past the batteries into the harbor and capture them by land attack. With this in view, he has already sent ashore in launches strong parties of marines, with three-pounders and machine guns, with instructions to land above and below the fortifications. Their movements are

reported to the artillery district-commander by the coast lookouts. He throws out his artillery supports, who take strategic positions and send out scouts to locate the invaders. Meanwhile the submarines, torpedo-boats, and destroyers have posted themselves just beyond the line of mines, waiting for the small boats of the enemy which will try to clear the channel in advance of the battleships.

At last the wireless telephone station picks up a scout-boat. It reports that out of the fog and blackness it has heard the throb of the engines, under half-speed; and, creeping up, it has distinguished the upper works of the flagship at the head of the line. Then it darts away and in a few moments makes a landmark by aid of which it establishes the position of the enemy. Immediately a searchlight picks out the fighting-tops of the flagship and the range-finders instantly locate them, confirm the information of the scout-boat and flash the range to the batteries.

The command to fire is given by every fire-commander within range. The nearest ships are 5,000 yards distant, but the great guns respond, the earth trembles, and a volley of 8-, 10- and 12-inch shells from guns and mortars goes screeching through the night. Many of them find their mark and the still invisible ship is perhaps rent by an explosion which hurls 20,000 tons of steel in every direction. Some of the fragments are hurled high in the air where the searchlights catch them above the fog now flying in long streamers before the breeze; some fall on the decks of the ships following behind. For a moment the guns cease firing and silence is complete. But the oncoming fleet now has the range of the forts and it opens on the shore batteries with every available gun. As fast as the positions of the ships become discernible, the battle commander directs which batteries shall engage the different ships—the mortars taking the most distant, the 12-inch rifles those coming next, and the 10-inch and smaller guns those nearest at hand. The firing grows fast and furious and the roar is terrific. The earth is shaken by the continuous concussions as the artillerymen work like automatons. The ammunition is delivered by the trolleys at the breech of each gun. There it is taken by the gunners, the projectile is shoved forward into the breech, and seven men, seizing a rammer, force it into its place. Then they shove the silken bags of powder after it, the breech is closed, the counterweight is released, and the 12-inch 50-ton gun rises on its leverage to the firing position. The aim being continuous, it can be fired as soon as it is in position; then the recoil takes it back to its former position and the operation of loading is repeated.

Thus, from all the batteries, a perfect hail of projectiles fills the air. Three more ships are blown to pieces and sink. Still the survivors come on, firing every available gun. Now another ship blows up — and another. The cries of the wounded are at last heard.

"Small boats stand by to rescue," the commander-in-chief orders over the telephone, and preparations are made to go out and pick up any survivors who can be found when the last ship shall have sunk or surrendered.

The end cannot be far off, for no armament could long withstand the hail of shell. Finally the 5- and 6-inch guns join in the action. Three or four of the vessels crawl like crippled beasts toward the shore, where their commanders hope to beach them before they become coffins for their crews. The remainder of the fleet, crippled but not in sinking condition, try to escape. Nothing but wings could save them.

As they turn their prows away from the straight onward course, the great mortars and 12-inch guns, as sure of their range as if it were target-practice on a summer day with corrections made for drift, temperature, wind, barometric readings, and the curvature of the earth, drop shells with the greatest precision on the unprotected decks. The ship on the left blows up with a muffled roar, her nose lifts, then sinks, and she dives to her doom. The begrimed gunners in the forts steady themselves to their work, one ship after another ceases firing, and all of them are quickly sunk save two, which are drifting helplessly. One of these is still firing spasmodically with an 8-inch gun, but a mortar battery sends it also to the bottom.

So much for the battleships. Meanwhile the small guns which guard the mine fields have been sending a rain of steel along the shore-line where the enemy's submarine flotilla and torpedo craft have been trying to get close enough to destroy the mines. Some of the shots tell, but before the guns can dispose of all of the small craft they get within the

THE ENEMY THAT ENTERS NEW YORK HARBOR MUST FIRST RUN THE GAUNTLET OF THESE LONG-RANGE RIFLES AT SANDY HOOK

skirmish line of the mines. Then the mine commander, by pressing a button at the right moment, sends them to the bottom with all their crews save perhaps a dozen who, stunned and bleeding, manage to disentangle themselves from their prison-houses and swim or float ashore.

The landing parties, which have not had time to get into action, are glad enough to surrender without firing a shot.

This imaginary conflict is not very different from what artillery officers think would happen if our coast defenses were so attacked. In fact, no navy now in existence could withstand the fire of coast-defense guns able to throw projectiles weighing more than half a ton to a distance of 12,000 yards with mathematical precision. And in this connection it is well to recall the words of President Roosevelt in his message to Congress, read March 5, 1906, conveying the recommendations of the "Taft Board" for Coast Defense. The President said:

" . . . The fact that we now have a navy does not in anywise diminish the importance of coast defenses. . . . A navy can be used to strategic advantage only when acting on the offensive, and it can be free to so operate only after our coast defense is reasonably secure and so recognized by the country. It was due to the securely defended condition of the Japanese ports that the Japanese fleet was free to seek out and watch its proper objective—the Russian fleet—without fear of interruption or recall to guard its home ports against raids by the Vladivostock squadron. This, one of the most valuable lessons of the late war in the East, is worthy of serious consideration by our country, with its extensive coast-line, its many important harbors, and its many wealthy manufacturing coast cities."

RECORDS NEVER SURPASSED

Notwithstanding the excellence of naval gunnery, the officers of the army hold that their branch of the service can shoot farther and straighter than the gunners of the navy.

The navy has recently demonstrated in battle practice at 5,000 to 9,000 yards that it can make three hits out of four shots, and better, with 12 inch shells, the target being thirty by sixty feet in size. That kind of

A BATTERY OF 12-INCH DISAPPEARING GUNS IN ACTION

shooting should be sufficient to win any engagement, for probably no other navy can shoot so well. But the coast-defense gunners say that they can do better, and they have some interesting records to show.

Every year the coast defense has regular target practice with the 10-inch and 12-inch rifles. Not many years ago ships would not have hesitated to sail in close and engage in artillery duels with the forts, as the United States ships did with the Cuban forts and those at Manila. Perhaps the gunners in the forts which protected the coast-line and harbors of the United States could have done better shooting then, had they been given the chance, but it is certain that were hostile fleets to try to "run" the forts now they would very quickly be annihilated.

Such is the extreme accuracy of the great rifles and the nicety of the mechanical equipment by which they are manipulated, that —given the range, the force of the wind, and the size and explosive values of the charge of powder to be used—the gunners can send a 12-inch shell through the opening of an ordinary barn-door (or the hatch of a ship) at a distance of five miles and not mar the paint on the casing. More than that, it has been proved possible, by recent practice, to put shot after shot into the small space covered by an armor plate (one yard by four) at a distance of three miles. At the recent army target practice, four batteries made 100 per cent. (perfect scores) at ranges of from three to four miles, using moving targets towed over the ranges at unknown distances, which were calculated by the range-finding system in use by the coast-defense service. From official sources it is learned that the followings scores were made:

Winthrop Battery, Fort Banks, Mass., June 27, 1907, 12-inch rifles. Mean range, 5,978 yards, percentage, 100; maximum range error, 8.4 yards.

Butterfield Battery, Fort H. G. Wright, N. Y., Aug. 13, 1907, 12-inch rifles. Mean range, 6,603 yards, percentage, 100; maximum range error, 61.3 yards.

Battery Hitchcock, Fort Strong, Mass., July 16-17, 1907, 10-inch rifles. Mean range, 6,123 yards, percentage, 100; maximum range error, 11.5 yards.

Battery McIntosh, Fort Dade, Fla., Aug. 1, 1907. Mean range, 6,167 yards, percentage, 100; maximum range error, 70 yards.

PREPARING TO LOAD ONE OF THE BIG DEFENDERS
The projectile and powder are brought in on trucks

When Brigadier-General Arthur Murray, Chief of Artillery, referred to the first of these records in his annual report, he remarked that it was likely to be rarely duplicated; yet before the report was published he was able to add that another score had been received which was even better than the first one that aroused his admiration, and still another nearly as good. Later on, another battery at San Diego also made perfect score.

It is admitted that such scores were thought impossible only a short time ago, and that even

RAMMING THE PROJECTILE INTO THE BREECH

Even while it is being loaded, the gunner at the sight and men at the wheel keep the muzzle pointed at the target

now they are exceptional; but to prove the assertion of the Chief of Ordnance that modern cannon are "instruments of precision," reference is made to the fine shooting done on October 25, 1907, with two 8-inch guns, by the 111th Company, Coast Artillery, Battery McIntosh, Fort Dade, Fla., Captain J. C. Johnson commanding.

The range was about 6,000 yards. As usual, three trial shots were taken to determine powder values, distance, and other conditions, and the range was so nicely calculated that two of the shots struck in the same place and the third not more than three yards beyond. The record practice then opened. The first two shots not merely made "hits" (striking within the space covered by a hypothetical battleship) but actually went through the small triangle of canvas used as an aiming point and corresponding to the bull's-eye in ordinary rifle practice. The second shot caused the breaking of the cross wire in the telescope, resulting in the gunner getting off the target, but he caught the range again and the fourth shot found the target. But for the accident, which the company, under the target practice rules, could not stop to repair, the score would probably have been four straight bull's-eyes. This magnificent shooting is regarded with the greatest pride by the whole Coast Artillery Corps.

THE GUN APPEARING ABOVE THE WALL, READY TO BE FIRED

The mechanism is so adjusted that the great mass of steel is raised almost without effort and the men in charge of it see that the muzzle remains on the target

A still later record was made November 16th, 1907, at Fortress Monroe, which is held to eclipse all previous achievements with heavy ordnance. An unofficial preliminary report by Captain Charles E. Kilbourne, 35th Coast Artillery, conveyed the information that at about 6,000 yards his battery of 12-inch rifles had made the unprecedented record of hitting the target at the rate of 1.74 shots a minute. This is approximately at the rate of a shot every 35 seconds, which is about five seconds faster than any other record at hand.

worked out by higher mathematics. The work of aiming, loading, and firing is so carefully systematized that even the powder, before it is used, is tested and blended; the grains are counted and carefully divided among the charges, and finally repacked in tightly-laced sacks of raw silk for loading to insure uniform results from all charges. This is done because the chemical changes taking place in the powder after it has been stored alter its explosive values. In target practice, trial shots test the range and the powder values.

THE GUN RECOILING JUST AFTER BEING FIRED

The recoil causes the gun to drop back out of the enemy's view, but the gunner keeps it always pointed at the target

Very effective, also, are the mortar batteries. These weapons are assembled in pits, four of them to a battery. The mortars are directed and fired from information given by the range-finders. A salvo from four mortars is calculated to have practically the same chance of making a hit as a shell from one 12-inch rifle, the latter being used with greater certainty of aim than the mortars. Incidentally, it must be evident that the range of the mortars is also greater, they being most effective at 8,000 to 12.000 yards.

THE NEW SCIENCE OF GUNNERY

Gunnery is no longer a matter of guesswork. It is a scientific calling where the ranges are

The greatest factor in the increase of efficiency has been the adoption of an effective range-finding system. The old system included an ordinary plotting-board, operated in connection with observers at the ends of a base-line measured off along the shore. Ordinary railroad transit instruments were used to make the observations, and the results were transmitted to the plotting-board operators by "wig-wag" signals. Firing was done at fixed targets anchored at known distances, without time limits. The pointing of the gun was so connected with the work of the operators at the plotting-board that an excessive amount of time was required to point the gun,

with proper corrections applied. Accuracy of fire was determined by observing "overs" and "shorts," of splashes and "slicks," and corrections for succeeding shots were based on such observations. The gunner pointed his piece by a direct sight, using the "tangent angle." These observations apply to the period from 1897 to 1900.

The change that has taken place is nothing less than revolutionary. The equipment for range-finding has been greatly developed, and an improved plotting-board has been introduced which accurately and quickly solves the range triangle and applies all corrections for range and deflections expeditiously. Instead of "wig-wagging" signals, observers now are in communication with the plotting-board and gun-platform by telephone.

By the introduction of this improved range-finding device, the gun system has been so much modified as to enable the gun to be fired independently of the range-finding. In other words, the rate of fire is dependent solely on the rapidity with which the gun can be loaded. Practice is now held with moving targets at unknown distances, and there is a larger percentage of hits now than there was formerly with stationary targets at known distances. Formerly the big guns were fired but once in from three to five minutes; now they can be fired at intervals of from forty seconds to one minute. Then they fired at ranges of about 4,000 yards; now they shoot at 5,000 to 10,000 yards. To sum it up in a few words, the coast-defense artillery can now shoot *sixteen times better at double the distance* than it could seven years ago. This means, of course, that a 10-inch or 12-inch gun can now make sixteen times more hits per minute than under the old system.

The problems to be worked out by gunners involve intricate calculations. Here is one of the simple problems designated by Lieut.-Col. Lissak, of the United States Military Academy:

"Correct the ballistic coefficient for altitude, and determine the angle of elevation required in order that a 1,048-pound projectile fired from the 12-inch rifle with a muzzle velocity of 2,350 foot seconds may strike a target distant 12,000 yards; the atmospheric conditions at the time of firing being barometer 29.5″, thermometer 67 degrees F."

The present system of coast-defense gunnery was introduced and developed at Fortress Monroe in 1900-1902. Much of the credit for working out the new system belongs to Colonel Erasmus Weaver, now Assistant Chief of Artillery. The head of the bureau,

THE GUN IS READY FOR RELOADING BEFORE ITS SMOKE DISAPPEARS

The gun detachment on the left returning on the run

A MORTAR BATTERY AWAITING THE COMMAND TO LOAD

A MORTAR BATTERY AWAITING THE SIGNAL TO FIRE

The muzzles are pointed skyward, but the gunners have calculated mathematically where the shells will drop

Brigadier-General Arthur Murray, has also done much in a practical way to bring his department to its very high state of efficiency. His own specialty is submarine mines, and experts say that the United States now has certain improvements which place it in the lead of any other country with respect to that kind of defense.

HOW GUNNERS GET THE RANGE

The range-finding system is comparatively simple. A base-line of any desired length is laid out, and at each end of it an observer is stationed in telephonic connection with the plotting-board. The observers take the angle made by the target with the base-line, and telephone it to the plotting-board, where it is used to work out the location of the target. This, communicated every ten seconds to the gunners, gives them the information which they need for pointing their guns. As a ship cannot change its course or speed materially in a few seconds, it is quite practicable for the plotting board to indicate the position of an enemy —or a target representing one—for ten, twenty, or even thirty seconds in advance. The gunners are therefore able to aim at the spot where the target will be at the time the projectile will strike. The speed of a 12-inch shell is approximately half a mile a second; if the target be five miles distant, the projectile would require ten seconds to cover the intervening distance. Therefore, by giving the gunners the location of the target for periods of ten seconds in advance, it is evident that both time and space are annihilated, and the possibility of making perfect scores is explained. At target practice the gunners do not use a material target. It would be impossible except at prohibitive cost, to provide a target the size of a battleship or to tow it over the course at the speed desired; and it has not been found practicable to shoot at real ships, even condemned ones. Instead, three floats are fastened together at equal distances by a cable, the entire distance from the first to the last being equivalent to the length of a battleship.

"TRACKING" A TARGET-SHIP IN THE "PLOTTING-ROOM"

It is by the mathematical work of this detachment, as well as by the mechanical work of the men behind the gun, that perfect scores are made possible

BRIGADIER-GENERAL ARTHUR MURRAY
Chief of Artillery and a specialist in submarine mines

THE BREECH OF THE 16-INCH RIFLE
Showing the wires which make the electrical connection of firing

Each float supports a triangle of canvas about nine feet on a side, and the central triangle is the mark for the gunners. A tug tows the target over the range at varying speeds and in different directions, the idea being to give the range-finders as severe tests as possible. On the tug is a board of officers who observe carefully where the shots strike; the average of their reports constitutes the official score.

New ideas are constantly being "tried out" in the artillery service. A recent invention to enable the artillery officers to follow the course of a shell by day or night is a small tube to be attached to the base of a shell. When the gun is fired, the tube begins to give off an intense magnesium light by night, and a black smoke by day, and the course of the shell can thereby be distinctly observed.

An important and even picturesque feature of the coast-defense system, introduced recently but now considered indispensable, is the use of powerful searchlights. They are being provided for all coast forts. These great searchlights enable the gunners to aim accurately at even the ultimate effective range of 12,000 yards. In case of fogs and stormy weather the utility of the searchlights is, of

THE LARGEST DEFENDER OF THE AMERICAN SEABOARD
The 16-inch rifle at Sandy Hook, which has been fired but four times. Its cost was $170,000

course, impaired. To prevent hostile ships from slipping into the harbor at such a time, 5-inch and 6-inch rapid-fire guns are placed where they can deliver a raking fire up and down the shore-line. Mines are also planted thickly where the depth of water and strength of currents permit their use, and scout-boats might be employed to patrol the channel and its approaches. These small, swift boats, equipped with wireless telephones, could render efficient service. On discovering an enemy they could slip away in the fog without being seen, for a big ship is, of course, visible much farther than a small boat. Once the forts know the location of an enemy's ship, they can shoot as straight at it as if it were visible, this being possible with the aid of the plotting-boards and range-finders. It is also probable that any hostile ship which enters the zone of the mine fields would be blown up before it could go very far.

The most formidable of all the coast-defense weapons is the 16-inch gun, constructed by the Army Ordnance Department, the only one ever built and perhaps the only one that ever will be constructed. Its cost was about $170,000, although part of this sum was for special machinery which would not need to be duplicated if more guns of that calibre should be built. This gun has been tested at the Sandy Hook proving grounds, and it is said that it can throw a ton of steel to an extreme range

A 6-INCH GUN ON CENTRE-PIVOT MOUNTING

of twenty-one miles, while it has an effective range of twelve miles. It has been fired but four times. The gun forms part of the defenses of New York. A model of it was on exhibition at the Jamestown Exposition.

Big as are the 12-inch guns, the Ordnance Department has decided to replace them with 14-inch guns. The use of the high explosives causes intense heat and the generation of gases which have an erosive action on the lining of the guns. With heavy charges of powder, the guns would be burned out with about sixty shots, or in less than an hour's engagement, if fired to the full limit of their capacity. By using lighter charges, the life of the guns would be prolonged but the projectiles would not have sufficient power of penetration to pierce the armor of modern battleships. With the 14-inch guns, however, a smaller charge would still send a

A 6-INCH ARMSTRONG RIFLE WITH ARMOR-PLATE SHIELD
At Fort Wadsworth, Staten Island, N. Y.

LOADING THE POWDER CHARGES
The powder is made in blocks, perforated in the centre

projectile weighing 1,660 pounds, loaded with high explosives, with enough force to go through the heaviest armor, and the damage to the gun would be much less than would result from a charge in the 12-inch gun heavy enough to give similar results. The 12-inch guns can throw a half-ton explosive steel shell at a muzzle velocity of 23,000 feet per second, which gives sufficient momentum to insure the penetration of twelve inches of chilled-steel armor at a distance of 8,700 yards, or seven inches of similar armor at a distance equal to the longest fighting ranges. But it is not enough merely to send a missile through the enemy's armor. Battle projectiles are fitted with fuses which can be adjusted to explode the shells with terrific effect at any moment desired after they have pierced the enemy's armor, and these deadly shells can be thrown with almost perfect accuracy every forty seconds from every gun that can be brought to bear on the enemy.

It is evident that mixed land and naval battles in the future must be short and decisive, if they occur at all.

The recommendation of the President that the pay of the enlisted men (as well as of the officers) of the army and navy be substantially increased has a direct bearing on the question of marksmanship. It has been shown that the remarkable records made by gunners in both branches of the service are due largely to individual training and practice, yet many of these men are allowed to drop out of the batteries and the battleships every year, at the expiration of their enlistment. If the increased pay helps to retain in the service a larger percentage of expert gun-pointers, the expenditure will prove a wise investment.

FORT HANCOCK, SANDY HOOK, FROM THE EXTERIOR
The terraced slopes give no hint of the engines of destruction beyond the wall

THE PROVISION BOATS FOLLOWING THE ENGINEERS

AN AIR-LINE ACROSS THE EVERGLADES

A STEP IN THE RECLAMATION OF AN EXTENT OF FERTILE SWAMP-LAND AS LARGE AS THE BRITISH ISLES

BY

WILLIAM ATHERTON DUPUY

AFTER struggling for fifty-two days through the mud of the saw-grass solitudes of the Everglades, sleeping on the piles of grass that sometimes reach above the water-line, eating scant rations packed on their backs and cooked with difficulty over an oil lamp, a party of Government engineers has succeeded in running an air-line from the Gulf to the Atlantic through the most inaccessible portion of the Florida peninsula. This is the first step in the reclamation of 77,000,000 acres of the most fertile land in the United States —a region greater in extent than the whole of the British Isles.

The figure named covers only the swamp land east of the Mississippi that is readily reclaimable. In extent it equals the combined areas of Indiana, Illinois, and Ohio. It is greater than New England and New York combined, and its soil is rich with the sedimentary and vegetable deposit of the ages. It would provide forty-acre farms for 2,000,000 families—enough to relieve congestion and poverty in all the crowded cities of the country. Similar lands already reclaimed in New Jersey and New England are yielding $100 an acre every year and bring higher prices than any other land in the community.

The Government engineers have spent much time in working out a practicable plan for the reclamation of the Florida Everglades, which is the greatest single body of swamp lands in the country. The records of previous surveys were fragmentary and unreliable. As the first step in the undertaking, therefore, two young engineers—Mr. Lawrence Brett, of Kansas, and Mr. E. Wallace Chadwick, of Pennsylvania—were designated for the difficult task of running an air-line all the way across the glades, establishing levels and leaving bench-marks for those who might follow. Mr. J. O. Wright, supervising drainage engineer of the Department of Agriculture, had direct oversight of the undertaking.

The actual work was done in the late winter of 1906 and early spring of 1907, that time of the year being the dry season. The Everglades are then covered with less water than at any other time, and a surveying party is able to get a footing on the ground and the weather is sufficiently cool to make work possible.

The young engineers and their four assistants made the start from Brown's Store, a settlement on the west side of the great swamp. Opposite this point, sixty miles due east, as the crow flies, is Pampano, a similar settlement on the Atlantic coast. Between the two points is the desolation of a great waste, a region practically unknown to the white man but through the solitudes of which the lone

Photograph by Julian A. Dimock

AN EVERGLADE FIRE, PROBABLY SET BY HUNTERS

Seminole Indian now and again silently pushes his canoe.

Water covers the entire country during the rainy season. The waters of Lake Okeechobee, to the northward, extend in shallows far to the south when the flood-time comes, but gradually recede during the dry season, there being a difference of nearly three feet in its levels in the two seasons. At the close of winter, when the water is lowest, the heart of the Everglades is half land, half sea. There are shallow lakes, called "bonnet flats," with sluggish streams known as "leads" connecting them. Between these the land rises slightly above the water but it is a spongy muck where a man sinks half way to his knees at every step. There is the eternal landscape of saw-grass five feet high, broken occasionally by a scraggly tree.

For a trip into the Everglades the only way to transport provisions is by canoe, and even this method is at times impossible where it is necessary to follow an air-line and the streams have strange and unknown windings. The party started out with Seminole canoes, which were dragged by land where they could not be poled by water. Dried fruits and staples, oil for fuel, and blankets for beds made up the cargoes of three canoes.

Progress was slow in the face of the many difficulties that the party found. They rarely covered more than two miles in a day, often not more than a mile. When the day's tramping was over, much of the night was consumed in the preparation of the camp. It was impossible to build a fire, because there was rarely dry land upon which to build it or wood with which to make it. In these emergencies the oil lamp was used to cook the meals, but an "oil famine" soon began to threaten them. When supper was over, the problem of lodging was solved by cutting sufficient saw-grass to raise the blankets above the water-level. The structure when completed was known as a "'gator nest" because of its resemblance to the homes of the alligator, which were often stumbled upon. The contest between weariness and safety from dampness was often sharp, and it occasionally resulted in an exhausted man sleeping with his body half sunken in water. Mosquito-bars were used with more or less success in the effort to escape the vast swarms of mosquitoes.

At the end of ten days the line had been pushed eighteen miles into the swamp, the

THE ENGINEERS WHO RAN THE LINE
Messrs. Brett and Chadwick, of the U. S. Department of Agriculture

oil supply was exhausted, and the party was living on uncooked food. A return to the starting-point for new supplies was made by the entire party, three days each way being consumed by the trip. With fresh supplies in the canoes, the line was then pushd on; this was the last view of the west side of the peninsula.

At the 25-mile mark, it was found impossible to carry the canoes farther, for there were no more "leads" running to the eastward. Two men walked eastward for half a day and found no water that would float the canoes. With the greater part of the journey yet ahead of them and a month already spent in the saw-grass, it was decided to carry upon their backs the supplies, bedding, and oil for the remainder of the trip. With these additional burdens to carry as they worked, the advance was even slower than befor..

THE PARTY READY TO START

HAULING A BOAT OVERLAND WHERE THERE WAS NO "LEAD"

But the party pushed the air-line forward and established levels so long as there was a handful of rice or a piece of bacon left; but when twelve miles more had been covered there was nothing to eat and the undertaking was far from complete. Then the line was temporarily deserted and a run was made for the Atlantic side—Pampano and food.

This run involved probably the greatest hardships of the undertaking. The men were already exhausted from want of sufficient food and rest. They had been so long in the water that their feet were blistered and swollen, the discomfort having been accentuated by poisoning from "wampee," a plant similar to the Indian turnip. The swamp here became more difficult to cross, for the "leads" were deeper and the ground was more boggy. In many places it was necessary for the men to carry their blankets and mosquito-bars high above their heads while they waded in "leads" up to their chins. In other places the ground was so boggy that they were forced to lie flat and crawl or roll to keep from sinking so deep in the mud that they would be unable to extricate themselves.

"THE LONE SEMINOLE INDIAN"

The exhausted party finally struggled from the swamps up to the strip of higher land that runs along the eastern shore of Florida, and soon found their way into Pampano and secured food. After three days' rest the return was made to the line and it was finally brought out. The engineers had established a new standard of endurance and perseverance in the Government service.

With this air-line as a starting-point, 30,000 square miles of swamp-lands in Florida may now be reclaimed and eventually converted into a garden of productiveness. It is sufficiently above the level of the sea to make it drain readily if the outlets are opened up. Lake Okeechobee is itself twenty-two feet above the sea and can be largely drained. There are no difficult engineering problems to overcome; it is only necessary to cut through a rim of rotten limestone that extends along the Atlantic coast and thus make a natural outlet. Then will remain the simple work of making ditches to tap the interior, or else the same result will be accomplished by developing the natural arteries.

Swamp lands in the other states offer similar difficulties, but on a smaller scale. The Dismal Swamp in Virginia is fifteen feet above sea-level, and Lake Drummond, its chief body of water, is half artificial. A canal leads from this lake through a lock and is several feet below its level. A removal of this lock would do much toward draining the great swamp.

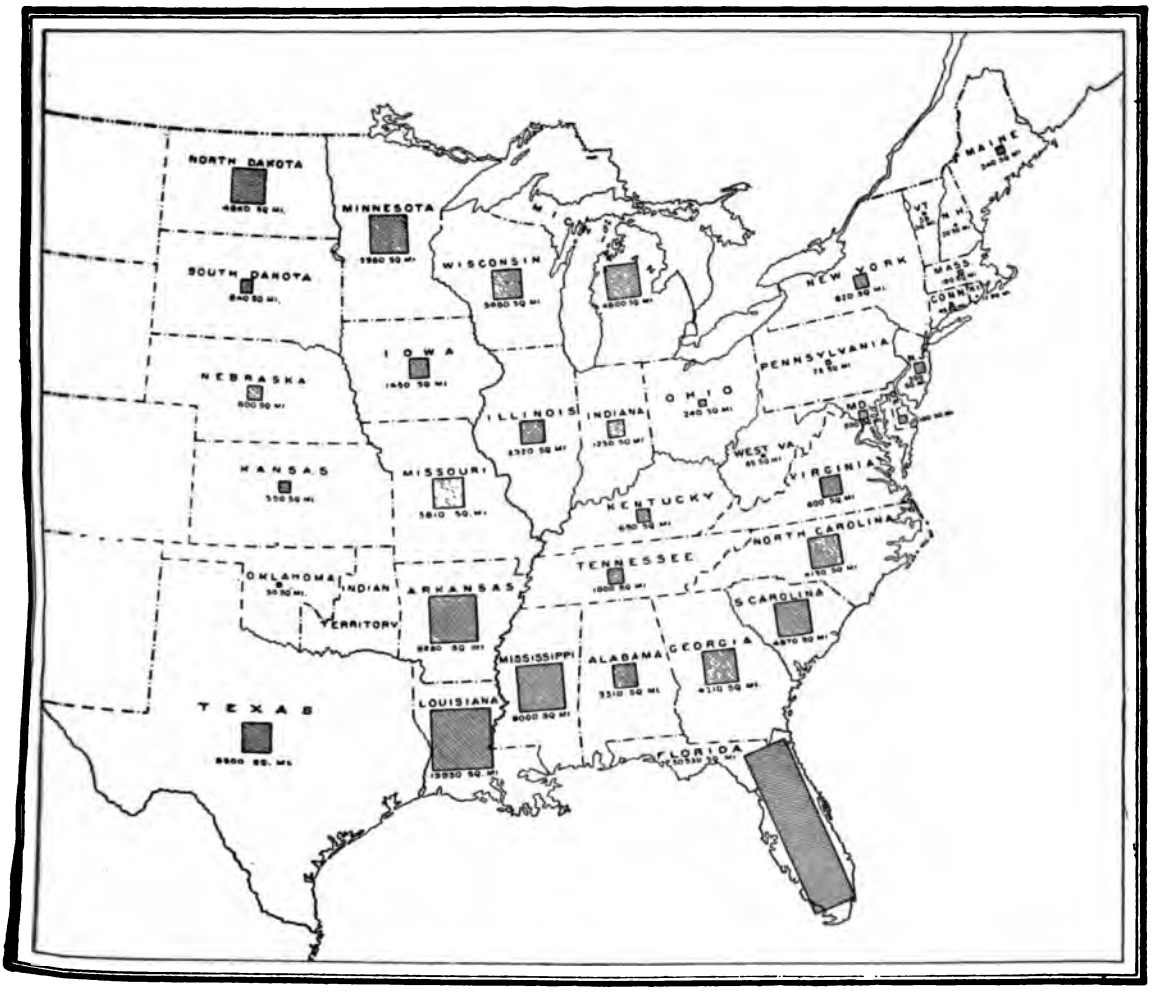
Salt marshes in many sections along the Atlantic seaboard have been reclaimed by private enterprise. The Newark meadows are to be converted into town lots by means of a dyke and an arrangement of automatic tide-gates to be installed under the direction of the Government engineers and financed by the neighboring city of Newark, N. J. This piece of work will be made an object lesson to show the possibilities of salt-marsh reclamation, and many communities are expected to follow the example. Long Island has already completed much of this kind of reclamation, and so has Massachusetts. The prosperity of Holland rests upon just such work. As a financial investment, the reclamation of these lands pays manyfold,

at the same time the mosquito nuisance is done away with and the health of the whole community benefited.

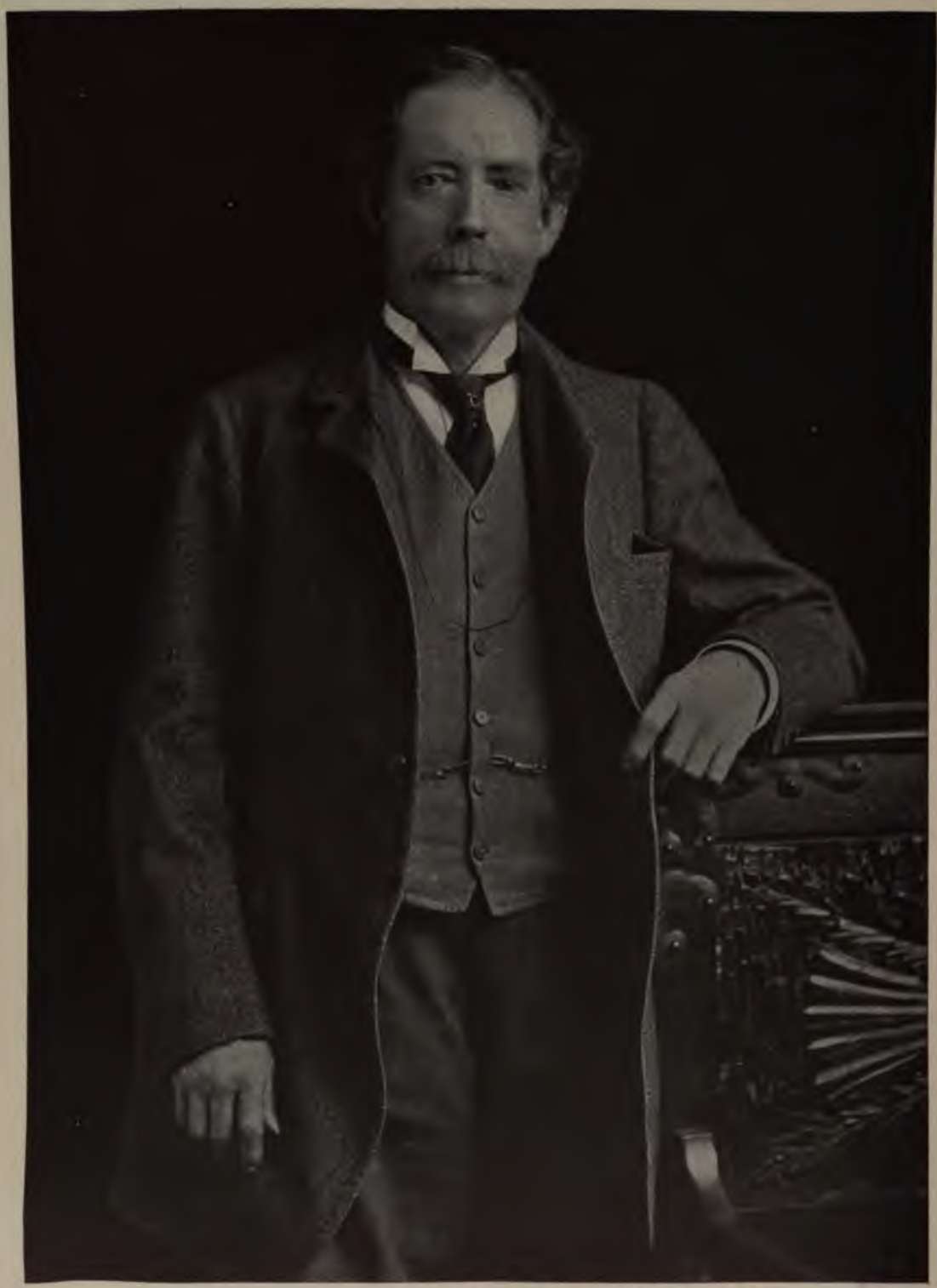
There is no doubt that the whole question of the reclamation of the swamp lands of the United States will be urged upon Congress at this and at subsequent sessions, until it is finally accomplished. There is no difference of opinion on the part of the engineers who have investigated the conditions; their recommendations are unanimously in favor of immediately pushing the work. It is not considered necessary to place the undertaking in charge of a special division like the Reclamation Service, for the engineering plans are nowhere difficult and may be handled readily by the Department of Agriculture. Swamp drainage is currently regarded as purely an agricultural function.

DRAINAGE OF PRIVATE LANDS

Practically all the lands that will be affected by drainage are already privately owned, and the expense of reclamation will naturally be assessed against their owners. Such was the plan followed in the reclamation of arid lands privately owned, and the results are so favorable that there is no question of practicability. It has been proposed that this plan be supplemented by an offer on the part of the Government to take the bonds of any given community which proposes immediately to reclaim its swamp-land under the direction of the Government engineers.



MAP SHOWING THE AREAS OF SWAMP AND OVERFLOWED LANDS IN THE STATES EAST OF THE ROCKY MOUNTAINS



GENERAL WILLIAM J. PALMER, OF COLORADO SPRINGS

GEN. WILLIAM J. PALMER, A BUILDER OF THE WEST

A DISTINGUISHED OFFICER OF THE CIVIL WAR, A CONSTRUCTIVE FORCE IN WESTERN RAILROADS AND CITIES, AND A CITIZEN AS HIGH-MINDED AS HE IS GENEROUS

THE career of General William J. Palmer, of Colorado Springs, is that of a man who has done big things in his time and who, throughout a long life, has shown that great force of character and great power of achievement are not inconsistent with gentleness and courtesy, or with modesty and unassuming philanthropy. A distinguished cavalry officer during four years of the Civil War, the former president of railroads and iron works, the founder of towns and cities, and patron of a college, he has so consistently shunned publicity that he is not as well known, even in Colorado, as many a man of less high character and fewer good works.

General Palmer was born near Leipsic, Del., in 1836, and received his education mainly in Philadelphia. When seventeen years old, he entered the Hempfield Railroad Engineer Corps as a rodman. Three years later, he went to England, where he spent a twelve-month in travel and study. When he returned home he was made secretary and treasurer of the Westmoreland Coal Company and a year later became private secretary to John Edgar Thompson, then president of the Pennsylvania Railroad Company. Mr. Carnegie was at that time secretary to the vice-president.

Young Palmer was in his twenty-fifth year at the outbreak of the Civil War. Shortly after the battle of Bull Run he recruited and was made captain of the Anderson troop of light cavalry, which saw service in the Nashville and Shiloh campaigns. In 1862, at the request of General Rosecrans, Captain Palmer organized the Fifteenth Pennsylvania Cavalry, which helped to turn back the Confederate invasion of Maryland at Antietam.

The day after this battle, Captain Palmer was detailed by General McClellan for "special duty within the enemy's lines" — a mark of confidence which resulted in his being captured and held as a prisoner of war until January, 1863. Upon his release he returned at once to active service in Tennessee, under General Rosecrans, as colonel of the Fifteenth Pennsylvania. He rendered distinguished service in the battle of Missionary Ridge and in the fight against General Longstreet during the winter of 1863-64.

During the Atlanta campaign, however, Colonel Palmer made his most brilliant record as a soldier. Starting from Lookout Mountain in pursuit of General Hood's army, he burned the headquarters' pontoon train, destroyed a supply train near Aberdeen, Miss., and finally routed the Confederate cavalry forces under Generals Russell and Lyon. In recognition of these services, he was made a brigadier-general, when in his twenty-ninth year. After the surrender of General Joseph E. Johnston, General Palmer was placed in command of the troops sent in pursuit of Jefferson Davis. The pursuit ended when the President of the Confederacy was driven into the hands of General Wilson. That capture was the climax to General Palmer's services as a soldier.

Of his war record, General George H. Thomas, "the Rock of Chickamauga," wrote: "There is no officer in the regular or volunteer service who has performed the duties which have devolved upon him with more intelligence, zeal, or energy than General Palmer, whose uniform distinguished success throughout the war places his reputation beyond controversy." The esteem of the men who followed him was shown by the remark of a veteran at the recent reunion of his regiment. " 'General Palmer,' as you Colorado people call him, is proper, of course, but *we* love to call him by the title he is most proud of — *Colonel* Palmer."

AS A RAILROAD BUILDER

But General Palmer's greatest triumphs have been in the constructive work of peace. Upon being mustered out of the army, young

Palmer became treasurer, director of surveys, and manager of construction for the Kansas Pacific Railroad, which has since become the Kansas division of the Union Pacific. Under his supervision, the Kansas Pacific was completed to Denver, in 1870.

The principal city of Colorado had then two railroad connections with the East, for a branch had just been completed from Denver to the main transcontinental line of the Union Pacific at Cheyenne, but the need of another railroad was imperative. General Palmer seized the opportunity and, with the coöperation of Governor A. C. Hunt, Colonel A. C. Dodge, Colonel W. H. Greenwood, and others, organized (in 1870) the Denver and Rio Grande Railroad Company and was elected president. He secured the large sums of money necessary for beginning the construction of what was the first narrow-gauge (three feet) railroad in the West, from Denver south along the base of the Front Range and across what is now called the Palmer Lake "divide," which separates the watersheds of the Platte and Arkansas rivers.

FOUNDING COLORADO CITIES

Meanwhile subsidiary companies for developing town sites were organized by General Palmer. He conceived the idea of laying out a summer resort about the springs at the foot of Pike's Peak, and this he named "Manitou." Just to the east of Manitou was the town of Colorado City, for a time the capital of Colorado, having been founded in 1859 by those who had come west with the motto "Pike's Peak or Bust!" — and had "busted." On the plains still farther to the eastward, five miles from the base of the great Peak, there was an ideal site still unoccupied. General Palmer and his associates here acquired large tracts of land and laid out the town of Colorado Springs. On August 1, 1871, the first stake was driven for the survey of Colorado Springs, which was planned to be what it has ever since remained—a delightful residence city for health-seekers. In 1871 the Denver and Rio Grande was completed to Colorado Springs; and during the next year to Pueblo on the Arkansas River. The later extension of the railroad south to the coalfields near Trinidad, west up the cañon of the Arkansas to other coal mines, and on across the mountains to the precious metal mines of Leadville is an important part of the economic history of the state; and it is also a story of discouragements and difficulties overcome by the courage and resourcefulness of General Palmer.

After the discovery of some iron mines at Orient, in Saguache County, and of the excellent coking qualities of the coal in the Trinidad region, both of which districts were reached by the Denver and Rio Grande, General Palmer helped organize the Colorado Fuel and Iron Company, of which he was the first president. In 1880 he and his associates laid out the town of Bessemer, now a part of the consolidated city of Pueblo, the second in size in the state. The one small blast furnace which his company built began to produce pig iron in 1881; the following year a bessemer department and rail mill began operations and they have continued without interruption. The industry, which owes its beginning, in a large measure at least, to the creative imagination and activity of General Palmer, has grown under other management until now the Colorado Fuel and Iron Company is the largest industrial corporation in the West, and its Minnequa Works at Pueblo is one of the greatest iron and steel plants of America.

In August, 1883, General Palmer resigned the presidency of the Denver and Rio Grande in order to push to completion the Mexican National Railway, of which for seven years he was president. In 1882-83, he had built the Rio Grande Western Railway from Grand Junction, Colo., the terminus of the D. & R. G. proper, on to Salt Lake City and Ogden — thus furnishing a through narrow-gauge line from Denver to Utah. When he resigned the presidency and disposed of his interests in the D. & R. G., he retained those in the Rio Grande Western, of which he was president from 1883 to 1901. In the latter year, when this road was sold to the Denver and Rio Grande, which was purchased by the Gould interests, General Palmer is reported to have realized several million dollars from his holdings, which in addition to his already large fortune made him one of the rich men of Colorado.

It was characteristic of him that at this time he should not forget the subordinates whose faithful services had helped him to gain great riches. Acting for himself and a few other large stockholders, he disbursed among 104 officers and several hundred employees, to each according to his length of service, the sum of a million dollars. At the same time, General Palmer provided a fund of several thousand dollars to

be distributed among the widows and orphans of workmen killed, several years before, in a coal mine accident at Pleasant Valley, Utah.

With these acts of generosity, General Palmer, then in his sixty-fifth year, retired to private life, though he still maintained an office at 11 Broadway, New York, and also one in Colorado Springs; but he saw no one personally on business.

In 1870 General Palmer had married Miss Queen Mellen, of Flushing, Long Island, who died in January, 1895. For himself and daughters he has recently rebuilt, near Colorado Springs, in a large tract of land whose natural beauty has been enhanced by the best landscape artists, a mansion modeled somewhat after Blenheim Palace. Although he has spent hundreds of thousands of dollars on spacious pleasure grounds for the public, he has laid out this place (which he calls "Glen Eyrie") for himself and family and his personal friends. He has let it be known in a thoroughly courteous way that he desires that there shall be no intrusions upon the privacy of his home, although his grounds are open to tourists, who come in large numbers. It is to the credit of his fellow-townsmen that there have been no attempts to photograph or to exploit in public a country-seat which is one of the most imposing and beautiful in America, but of which the general public, even of Colorado, knows nothing in detail.

HIS PUBLIC BENEFACTIONS

General Palmer's benefactions, amounting to several million dollars, have been unobtrusively placed. During the past few years he has given to Colorado Springs a system of public grounds and drives which would probably have been impossible as a public enterprise. Up to a year ago he had expended over half a million dollars on public playgrounds and roads in and about Colorado Springs, Colorado City, and Manitou. Nor does this include the recent gift of Manitou Park, valued at $100,000, for the uses of a forestry school, nor of other generous additions to the lands of Colorado College. He plans to expend at least another $500,000 on parks and boulevards in Colorado Springs. For some years he has had on his private pay-roll an average of 250 men constantly employed on public works, which has meant a monthly expenditure for labor and supplies of scarcely less than $15,000. It is understood that the General has made arrangements for an endowment fund for the maintenance of these works. Monument Valley Park — which with its ponds, lawns, terraces, and shrubbery, extends for two and a half miles northward from the D. & R. G. station between the right-of-way and the most attractive residence district — is so situated that every traveler on this railroad gains the impression of the rare beauty of Colorado Springs. Then there are other parks too numerous to mention in detail, and miles and miles of well-built, well-kept boulevards and trails over foothills and through cañons — all monuments to the public spirit of the city's founder. No other man or group of men in the Far West has done so much for good roads as has the man who years ago built Colorado's greatest steel highways.

For some years that part of Cheyenne cañon in which are the celebrated Seven Falls has been owned by a private syndicate, which extorts a twenty-five-cent toll from every visitor — an example of avarice that has been a source of deep annoyance to most of the citizens of Colorado Springs. Several times General Palmer made liberal offers for the purchase of the cañon in order to open it as a free park for the public. The price asked was so exorbitant, however, that the high-spirited General finally broke off negotiations, bought Cutler Mountain, and built over it a trail from which one can obtain an excellent view of the Falls.

FOUNDING COLORADO COLLEGE

When Colorado Springs was laid out, in 1871, under General Palmer's direction, a pleasant tract of twenty acres was reserved which it was hoped might prove an inducement for the foundation of a college. In 1874 the Colorado Association of Congregational Churches selected Colorado Springs as the site of Colorado College, of which General Palmer was one of the first trustees. In addition to several hundred students from Colorado and adjacent states, many boys and girls from the East who have been overtaken by ill health are enabled here, as in Colorado's other institutions, to continue their higher education. It is, doubtless, with this latter idea in mind, rather than with a desire to increase the number of small colleges, that General Palmer has given to the management the benefit of his counsel and business ability, and has also made to the college gifts amounting to more than a million dollars.

In connection with the dedication of one of the several buildings which he has given to the college, occurred an event which shows how the cultivated people of Colorado appreciate General Palmer's patronage of higher education and how highly they esteem him as a man. Ostensibly to help celebrate the opening of Palmer Hall, but really to honor its giver, more than two hundred college graduates resident in Colorado held an "intercollegiate dinner" in a hotel in Colorado Springs on February 22, 1904. On this occasion Harvard, with thirty-two representatives, had the largest number present. No one who was present can ever forget how those 200 college men sprang to their feet and cheered continuously for several minutes when the toastmaster called upon the gallant old General. Modestly as a girl, he expressed his appreciation with a simple: "Gentlemen, I thank you!"

In the fall of 1906, General Palmer met with an accident which rendered him a cripple. He was thrown from a horse and sustained an injury to his spine which brought on partial paralysis. For months his death was almost daily expected. Now, although somewhat better, he is confined to an invalid's chair and is able to go about only in a specially constructed automobile. Throughout this long period of pain his thoughts were ever of others and his hopes for longer life were inspired largely by his wish to carry on his public works.

HIS REGIMENT'S LAST REUNION

As he became better, however, the desire grew upon him to see once more the other survivors of his old regiment, the Fifteenth Pennsylvania. He was unable to undertake the long trip back to Pennsylvania, as had always been his custom in former years, but his comrades in many a fight felt that their thirty-fifth, and perhaps their final, reunion would be but a sorry affair without their colonel. So, in his usual princely fashion, General Palmer invited all the survivors to come to Colorado Springs as his guests from the moment they left their homes until they returned. It is noteworthy that 264, all but a very few of those who are still alive, accepted his invitation. From Pennsylvania and back again, General Palmer ran a special train and provided transportation for all the members of the regiment who lived in other parts of the United States. It has been estimated that the reunion that was held last August cost General Palmer about $40,000.

During the reunion occurred an incident which might have been exceedingly unpleasant but which gave an opportunity for General Palmer to show again his gentleness and generosity of spirit. For twenty years Mrs. J. A. Hayes has been one of the leaders in all that is best in the life of Colorado Springs. Entirely unaware of the fact that this gentlewoman, the wife of the city's most prominent banker, was the daughter of Jefferson Davis, one of the veterans hung in the rotunda of the hotel a framed copy of the proclamation offering a reward for President Davis's capture, which General Palmer had issued in accordance with orders from the War Department. Although the visitors doubtless regarded it merely as an interesting war relic, like a captured gun or flag, when General Palmer heard of its exhibition he at once made a request that it be removed. As was natural, however, the newspapers made a feature of this proclamation, which declared that the Bureau of Military Justice had "indubitable evidence" that Mr. Davis and other Confederates had incited Lincoln's murder.

Thereupon Mrs. Hayes wrote an admirable letter, full of self-restraint and concluding with a graceful tribute to General Palmer — "an ideal man, who spends his days in doing good deeds." In the course of her letter, Mrs. Hayes said:

"It may not be uninteresting to General Palmer's guests to hear how Jefferson Davis felt about this ill-timed and lamentable murder.

"I was a small child at the time, and, like most Southern children, I looked upon Lincoln as the arch-enemy of my country; and, thoughtlessly, as the servants and guards around us were rejoicing, I ran to my father with what I supposed would be good news to him. He gravely and gently took me in his arms and explained to me that this terrible deed had been done by a crazy man who, no doubt, thought he was the savior of the South, though really her very worst enemy. My father added, 'Always remember, my little daughter, no wrong can ever make a right. The South does not wish her rights to come through dastardly murder, but through fair fight.' Then he sighed deeply and said: 'This is the bitterest blow that could have been dealt to the Southern cause. Lincoln was a just man and would have been fair and generous in his treatment of the Southern people; his successor is a man we can expect nothing from.'

"Lincoln, who knew my father (would have known) . . . that Jefferson Davis and the

other Southern men accused were incapable of instigating murder . . . Jefferson Davis could never understand how such an impression could have gained foothold among the men who made history in the North, for many of them had known him and should have known that he was above so vile an action."

In response to this, General Palmer wrote a letter in which he said that it had been a long time since anyone believed that Mr. Davis had any responsibility for the assassination of Abraham Lincoln. When the veterans had their farewell reception at "Glen Eyrie," the daughter of Jefferson Davis was one of the honored guests.

THE GEOGRAPHY OF THE GREAT LANGUAGES

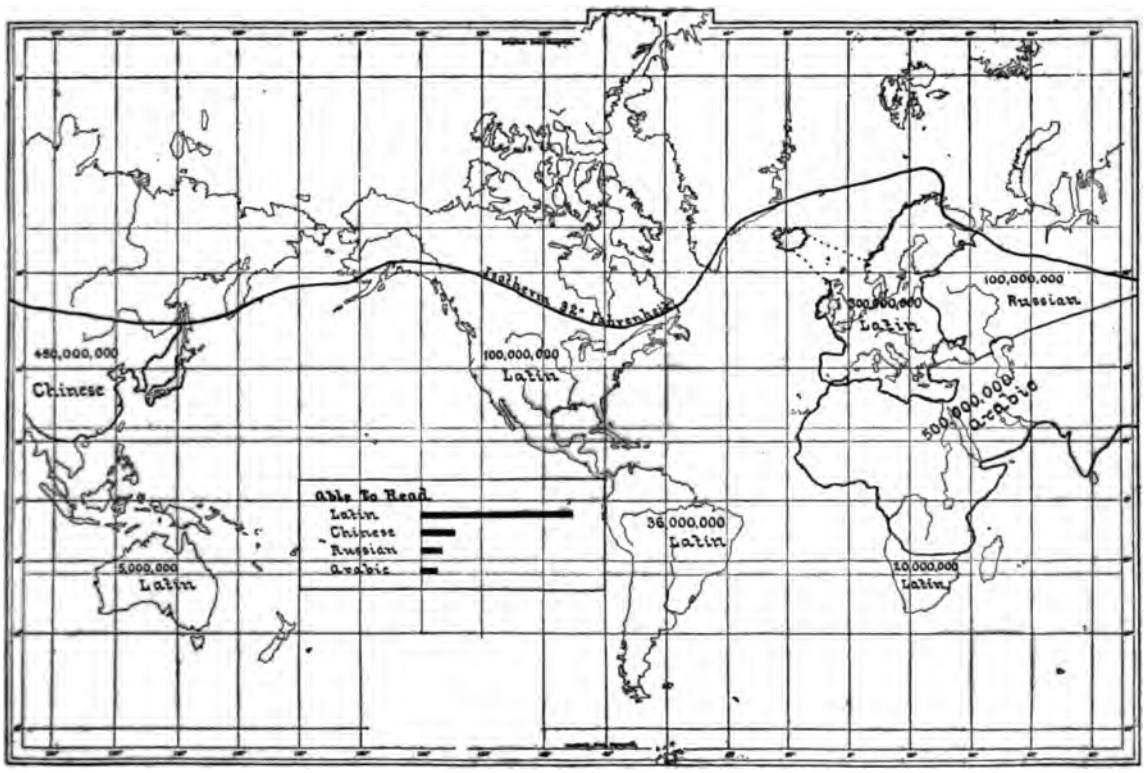
THE STEADY ADVANCE OF ENGLISH AS A UNIVERSAL WRITTEN LANGUAGE, AND ITS RELATION TO LITERACY

BY

E. H. BABBITT

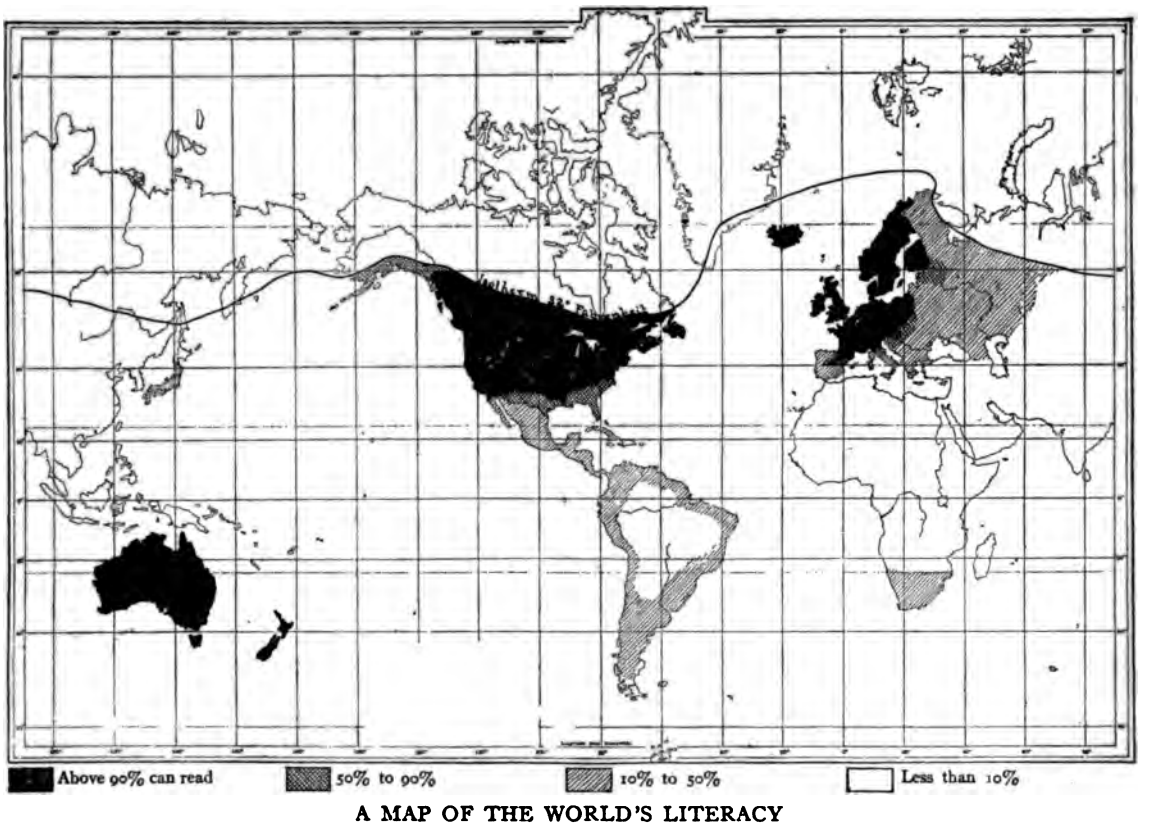
SOME time ago a typewriter firm, in advertising a machine with Arabic characters, made the statement that the Arabic alphabet is used by more people than any other. A professor of Semitic languages was asked: "How big a lie is tnat?" He answered: "It is true."

In a certain sense, it is true; the total population of all the countries whose inhabitants use the Arabic alphabet (if they use any) is



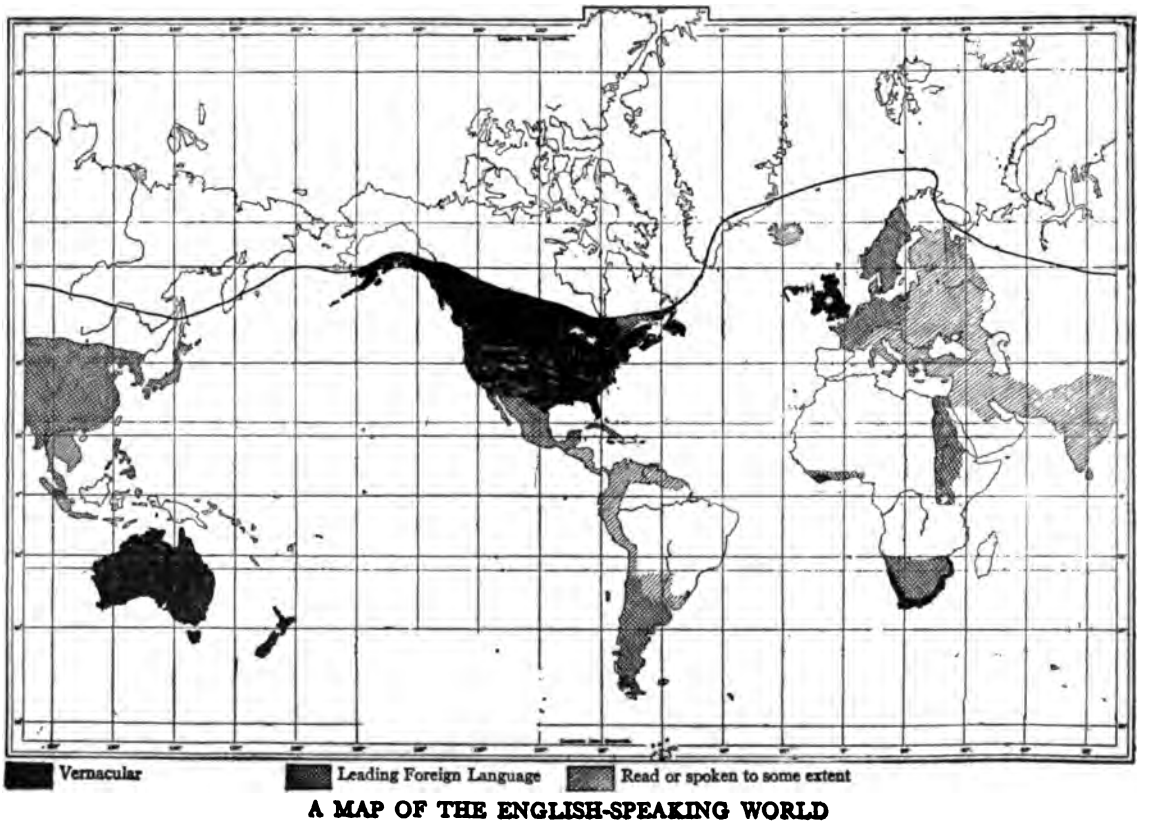
THE ALPHABETS OR SYSTEMS OF WRITING IN THE WORLD TO-DAY

Most of those who can read at all use the Latin alphabet



A MAP OF THE WORLD'S LITERACY

It bears a striking resemblance to the English map below



A MAP OF THE ENGLISH-SPEAKING WORLD

slightly larger than that of those who use the Latin alphabet and its slight variations, or the Chinese characters (which of course are not an alphabet).

The area and population of the territory of the four leading systems of writing is shown in the first map. These four are the only systems used exclusively by more than two per cent. of all the people who can read. The Japanese have a system which more than that can use, but they mostly do use the Chinese characters. The principal other alphabets are the Hebrew, representing at most ten million people; the Greek, eight millions, and the Armenian, four millions.

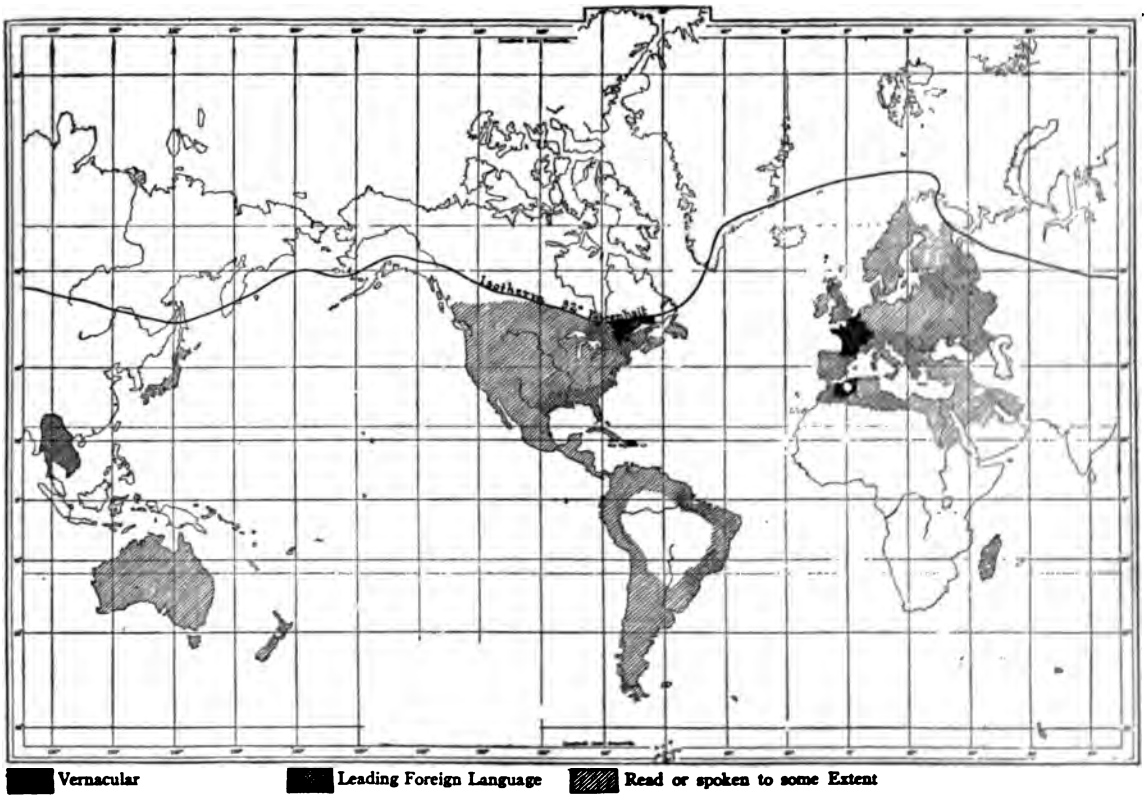
If, however, the question is how many people can actually use any alphabet or system of writing, the Arabic stands lowest of the four, as shown by the diagram.

Supposing that things go on at the present rate until the year 2000: the new countries will then be filled up to about the present density of Europe and the old ones will have increased, relatively less in proportion, but still considerably. It is only for the temperate zones that any reliable facts are known or predictions possible; the future of the lands within the tropics is very problematical, and the lands north of the isotherm of the freezing point can never sustain any large permanent population.

Reference to the maps will show that there are in these zones only three languages dominant in any great amount of new land: English, Spanish, and Russian. The population of the world in the year 2000 will be about 4,400,000,000. The representation of the leading European languages then and now, will be as follows:

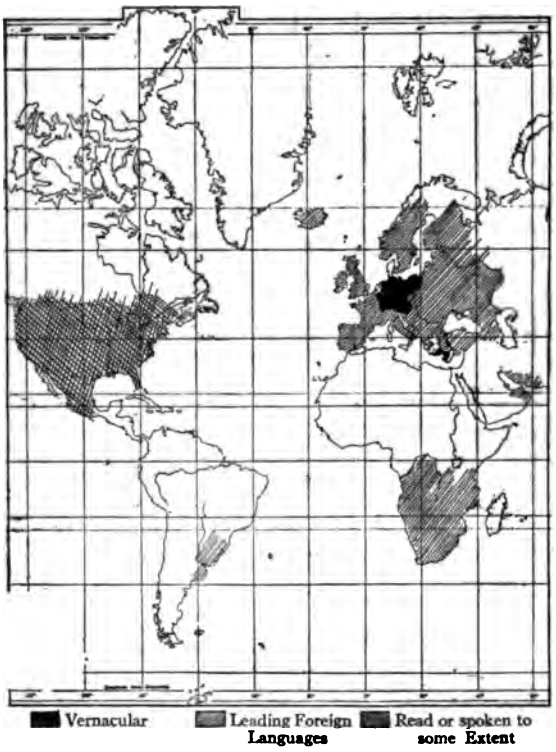
LANGUAGE	POPULATION IN 1900	PER CENT.	POPULATION IN 2000	PER CENT.
English	160,000,000	10.0	1,100,000,000	25.0
Russian	100,000,000	6.3	500,000,000	11.0
Spanish	50,000,000	3.1	300,000,000	8.0
German	70,000,000	4.4	160,000,000	3.4
Italian	35,000,000	2.1	100,000,000	2.0
French	40,000,000	2.5	60,000,000	1.3

The question of the relative importance of a language as a literary medium is a question of how many people want to read it. There



A MAP OF THE FRENCH-SPEAKING PEOPLES

are two classes of these: those to whom it is vernacular, and those who learn it in addition to their own language. The latter class is of the greater importance in proportion to its numbers; a man who has education enough to acquire a foreign language is pretty sure to use it, while many of the former class, who can read, really do read very little. Those who count in this matter are those who can get information from a printed page as easily as by listening to some one talking. A fair index of the relative number of these in a country is the newspaper circulation there.



A MAP OF THE GERMAN-SPEAKING PEOPLES

The second map shows how the literacy of the world is distributed, and it represents some rather striking facts. The relative smallness and compactness of the area of practically universal literacy will be noticed. Its southern border follows very closely the isotherm of 60 degrees F. It is practically coëxtensive with the territory of the Germanic and Celtic races. Still more significant is the fact that it is practically the territory where, for a few generations, no priesthood has had control of the schools.

The second grade, 50 to 90 per cent., appears as a mere fringe on the first, being in most cases where there is a racial element which is backward in education in a country otherwise advanced. Traditions in the rest of the world have been generally against the education of women, and so no part of it has reached 50 per cent.; but it is surprising how much is still below 10 per cent.

The maps show the territory of the vernacular use and "sphere of influence" of the four leading European languages. The other important language, Russian, has no "sphere of influence" outside of the Empire, and is not vernacular over the whole territory within.

A language must have a recognized literary standard and all the people in its territory must learn to use it as such before its influence goes far abroad. English, French, and German, and they alone, have reached this point. French and German have no new country, and practically the whole of their population is now literate; their relative share in the world's reading can only increase as their population increases. Spanish and Russian, on the other hand, have both new country and room for a much higher percentage of literacy.

A MAP OF THE SPANISH-SPEAKING PEOPLES

It is probable that all the countries in temperate zones will have universal literacy by the

end of the century. In this case, even if no one read English outside its vernacular countries, it would still hold its own as the leading literary language. German and French are bound to fall off relatively as vernaculars, and this implies a falling off of their importance as culture languages; but the importance of English in this respect is bound to grow. The first place among foreign languages has been given to it in the schools of many European and South American countries; Mexico and Japan make it compulsory in all schools of upper grades; and China is to follow Japan in this respect as soon as the work can be organized.

The number of people who can actually read, or will learn if now too young, for the various languages of the world appears to be as follows:

LANGUAGE	NUMBERS IN MILLIONS	PER CENT.
English	136	27.2
German	82	16.4
Chinese*	70	14.0
French	28	9.6
Russian	30	6.0
Arabic	25	5.0
Italian	18	4.6
Spanish	12	2.6
Scandinavian	11	2.2
Dutch and Flemish	9	1.9
Minor European†	34	6.8
Minor Asiatic†	16	3.2
Minor African and Polynesian†	2+	0.5
Total	473+	100

* Not a spoken language, but a system of writing.
† None representing as much as 1 per cent of total.

English, therefore, now leads all other languages in the number of its readers. Three-fourths of the world's mail matter is addressed in English. More than half of the world's newspapers are printed in English, and as they have a larger circulation than those in other languages, probably three-fourths of the world's newspaper reading is done in English.

DECLINE OF FRENCH AND GERMAN

The languages next in importance, French and German, cannot maintain their relative positions because English has more than half of the new land in the temperate zone and they have none. The languages which have the rest of the new territory, Spanish and Russian, are not established as culture languages as English is. No other language, not even French or German, has a vernacular so uniform and well established, and with so few variations from the literary language. English is spoken in the United States by more than fifty million people with so slight variations that no foreigner would ever notice them. No other language whatever can show more than a fraction of this number of persons who speak so nearly alike.

It is then probable that, within the century, English will be the vernacular of a quarter instead of a tenth of the people of the world, and be read by a half instead of a quarter of the people who can read. Indeed if its supremacy is frankly recognized, it can be made the universal reading language in even less time.

THE MONEY-KINGS

IV

SAFEGUARDING THE TRUST COMPANIES

BY

C. M. KEYS

IN THE first article of this series, published in October, but written in August, when not a single cloud seemed to obscure the sky, the writer said:

"The object of these articles is to bring out some of the most striking facts about banks, bankers, and banking. It is full time that the people began to understand some of these mysteries. Whatever a bank may be, it will be at once evident, from the introduction to this article, that it not only holds the people's money, but also that it is the most important of the agencies that make prosperity or the reverse in the country. The time is coming, and swiftly, when the bank will take the place of the railroad as the centre of the popular interest and agitation. From a fair working knowedge of both the railroad and the bank, I believe that the

latter is not only the more immediately important to the people, but also the more worthy of public attention on account of methods and manners."

That time has come. The task of showing to the people the abuse of banking power has been accomplished by Fate, and any demonstration that I might make would be feeble and inane beside the record of suicide, disgrace, bankruptcy, and terror written by that Moving Finger across the banking history of New York and the United States in the three brief months that have intervened.

The analysis of trust company methods was the second part of the subject as it was outlined. The failure of the Knickerbocker Trust Company and the distressing events that followed it have left me little to say. In passing, however, let me write that the Knickerbocker Trust Company would not have figured, save by indirection, in the story as I should have written it. I am of the opinion that this institution could have been saved, and would have been saved, had it not antagonized some of the Money-Kings. For that reason, Capital made its fight against Panic in the Trust Company of America. It could as well—perhaps much better—have made that stubborn and splendid fight in the Knickerbocker Trust. As it was, this company had to stand alone—and it fell.

To-day, as a result of the October and November catastrophes, the current of public opinion is running strongly against the trust company as an institution. The public judgment, for many years far too lenient, is now far too severe. There are fifty-odd trust companies in New York alone. Of them, I can name fifteen at least whose methods have never been perverted, whose banking is as sound as could be, who are absolutely untouched by the infection of speculation. This faith is not based upon names, nor titles, nor on published statements of surplus and profits—that never failing lure to the uninitiated. It is founded upon some years of personal study, and upon certain knowledge as to methods and administration.

Yet there are many respects in which the laws under which these companies do business are defective. There are also many hidden abuses of the power given by the laws. The trust company growth of the past ten years has been marvelous to the eye. Much of it has been proper, healthful, sound growth; but much of it has been poisonous, fungus growth. Trust companies have, at times, been debauched to the uses of promoters, to the unholy needs of insurance corruption, to the wanton demands of real estate, railroad, and industrial magnates. This very debauch, in some instances, has made the trust companies great of girth and weight. To-day they are stripped for contest; and in this contest strength and cleanliness will win against girth and weight.

In New York and many other states, superficially, the trust companies and the state banks meet the same laws, the same inspection, the same law requiring reserves. In effect, however, convention and practice have widely separated the two institutions. In the discussion of the trust company, much will be found that may be applied to the state bank also; but it will be clearly enough indicated in the text.

Let us use, as a basis, an analysis of the functions of an old, well-established, and successful trust company. This analysis and the information connected therewith were furnished by an officer of the company itself, months before the recent crisis. The functions carried on by this institution are detailed as follows:

(A) Banking Department:

It exercises all the functions of a state bank. It has on deposit $50,000,000 of deposits. Its receipts for a single day have reached $25,000,000.

(B) Foreign Exchange Department:

It buys exchange against shipments of cotton, corn, merchandise, etc.; it sells drafts, issues letters of credit, buys and sells bankers' bills. It turns over, in a year, more than $1,000,000,000 of business.

(C) Bond Department:

In normal times, it carries in stock as much as $10,000,000 railroad, municipal, and other bonds, and does exactly the same business in them that is done by the private banker.

(D) Trust Department:

It acts as executor, trustee, guardian, depository of securities, or agent in any financial transaction. Fees are limited by law.

(E) Registry and Transfer Department:

It registers and transfers stocks and bonds of corporations, and attends to organization or reorganization. Its payment is in fees.

The company thus analyzed does not maintain other departments, but the following must be noted to get a complete idea of all

functions carried on by the trust companies of the country:

(F) Real Estate Department:

Buys and sells real estate exactly as is done by regular real-estate brokers. The St. Louis trust companies are, perhaps, the most striking illustrations of this practice.

(G) Interest or Savings Department:

Pays interest on deposits, and advertises to secure savings deposits. In some states, the word "savings" cannot be used. "Interest" does the work in those states.

(H) Home Department:

Builds homes for owners of real estate, on regular instalments. The work is closely akin to the building and loan company work.

(I) Title Guarantee Department:

Examines and certifies titles to property. In many cases, this is done in the real-estate department, but, in this state and others, this work is done by trust companies which do not themselves deal in real estate.

The laws, we shall say, permit all these activities in one institution. The law is not, perhaps, too wide in many respects, but it is distinctly lacking in detail. That is, the element of personal discretion is allowed to assume by far too great a place in the administration of these huge concerns.

The banking department needs little explanation. In general, the New York companies do little discounting of bills. The great bulk of the banking business is financial banking, not commercial. Herein there is a very striking difference between these banks and the national or state banks. For instance, the trust company analyzed above had $32,000,000 in loans on collateral, and only $1,700,000 of "other loans."

HOW TRUST COMPANIES ARE WRECKED

It is, of course, in the carrying on of this department that the trust companies, in some instances, have far exceeded their rights, legal or moral. It is usually perfectly legal for a trust company to become an underwriter on a grand scale, to undertake the financing of a dozen new enterprises, in Cuba, in Mexico, in the United States, all around the world. But when one finds immense proportions of the deposits tied up in holding huge, ungainly, and wholly unmarketable blocks of railroad and industrial stocks, of foreign promotions, of small syndicate bonds and stocks, one may decide that the trust company has stepped over its moral limit, no matter how it may stand concerning the law of the state. In fact, it has ceased to be a bank, except incidentally, and has become a private banker or promoter, using for such business the funds entrusted to it in a banking capacity.

This error is widespread. We noted it in the failure of the Merchants' Trust of New York, which was loaded with unmarketable traction and power bonds: in the collapse of the Trust Company of the Republic, loaded with Shipbuilding securities; in the failure of the Walsh Banks in Chicago, carrying huge amounts of securities representing half-completed railroads; in the Knickerbocker Trust, with its hundred underwritings. In fact, this error enters into practically every trust company failure of the past ten years.

Now, underwriting is quite a proper function of the trust company; the law would seriously cripple not only the trust company but enterprise itself if it were to draw too strict a line. Yet the law should make clear just how far the discretion of the president, or the manager, of the trust company may be trusted in making underwriting commitments. That is the danger-point. If the president uses the funds in underwriting speculative campaigns in real estate, in furthering a great gamble in such securities as Shipbuilding, for instance, in holding control, through stocks, of speculative industrials such as Tennessee Coal and Iron, in making great personal loans to friends or customers whose ability to repay he knows to be dependent on gambling operations in stocks, or grains, or cotton—then the law should lay upon his shoulder the hands of the police.

Herein the New York law is not only defective but laughable. It is a jest, no more. The examination of the trust companies is nominally good enough. The state can learn the exact condition of the trust company every three months, if it please. The state department is not born blind. Practically every mistake, every investment crime, every bit of gambling that has been perpetrated by the trust companies and that has led on to final ruin has passed, months before, through the hands of the state department. But, of course, nothing has been done. The reason is the same old reason—that the state department is largely a political organization, born of craft and politics, inept, expensive, ludicrous. Here is a task for Mr. Hughes.

There is but one remedy, the same remedy that has kept the great bulk of our trust

companies clean, strong, and free from taint. It is self-examination. The law provides that every six months the board of directors shall itself examine the trust company, analyze its loans and discounts, check up its underwritings, and report upon these things. Upon the honesty, efficiency, and thoroughness of such examination the real strength of the institution must depend.

Therefore, the director must not be a "dummy" director. He must be able to tell a loan when he sees one. He must know the difference between a bundle of Government bonds and a bale of hay. He must give of his time and his labor freely, not hurriedly. He must, in fact, have the soul of a trustee, the old-fashioned virtue of honesty, the courage to speak his mind without hesitation. It takes unlimited courage in a bank director to get up on his feet and order that the president, who may own more than half the stock of the company, or whose friends may own it, shall cease to underwrite the bonds of the X. Y. Z. Railroad Company, the bank's biggest customer. It takes the grit of a hero to refuse to loan further to a railroad magnate whose operations cover the continent. It may take the combined nerve of the board of directors to call the loans of the director of a big corporation. Yet these things must be done.

Of course, the banking department is the life, the heart, of the trust company business. Yet much may be said of the other departments. Foreign exchange is a technical subject. I shall not discuss it, nor attempt to explain it. I shall say merely that it is safe, legitimate, and necessary. Few of our trust companies have mastered it as yet, or reached the point of certainty and knowledge arrived at by the old foreign firms of Wall Street which once monopolized it. It ties up funds sometimes for a considerable time, but, on the whole, is not deserving of any severe criticism as carried on by the best of the trust companies.

TRUST COMPANIES AS TRUSTEES

The real task of the old-fashioned trust company is the work of the trust department. It is an enormous work. The Girard Trust Company, of Philadelphia, has more than $75,000,000 of trust funds, not including stocks or bonds left with it for safe-keeping, nor yet including $250,000,000 of securities deposited with it as trustee of various collateral mortgages. In New York, the best of the trust companies do an enormous business along these lines. The charges are light, the work is efficient. Of course, money deposited in this way with the trust company is not to be used in any speculative ventures at the will of the management. The trust company is usually merely an agent, acting under the trustee laws of the state, or under the direction of the depositor. In this function, the New York companies have usually acquitted themselves with honor.

The registry and transfer of securities is normally legitimate. Yet, I shall illustrate the one iniquity of it, as practised in New York.

As a reporter, I once investigated a copper company which advertised profusely in the public press. One of its announcements was sent to me from the West, with a note to the effect that the "mine" did not exist, but was merely a claim, and that no work was going on or had gone on. Across the middle of the advertisement, in letters barely smaller than the name of the mining company, appeared the name of a well-known New York trust company, with the word "registrar" in small letters beneath it.

I went to the vice-president of the trust company, whom I knew, and showed it to him.

"My friend wants to know," said I, "whether this trust company owns the mining company or the mining company owns the trust company."

The remarks of the trust company official will not bear repetition. In the end, it was decided that I should go and interview the president of the mining company.

He was a pleasant fellow. He showed me "samples" from various depths in the mine, spread before me numerous "assays" from these samples, and generally induced me to come on in. Finally we got around to that trust company.

"Oh yes—they investigated, and found us all right. We are authorized to use their name in our advertisements. They are our registrar—makes it better you know, because you know that you are not getting any forged certificates. I understand that some of the bank fellows have bought blocks of the stock themselves."

When I asked for permission to use the telephone, he granted it gladly. He was very polite. When I got the wire and asked for my friend, the vice-president, the mining man was not suspicious. But when I said: "Mr. Blank, the president of the—— Mining

Company tells me that your trust company has investigated his mine and finds it good: would you like to talk to him?" and then handed the receiver over across the table—the air grew oppressive. I departed, but not before I heard behind me the surly remark:

"All right, throw us out if you like! But you took the business with your eyes open, didn't you?"

And that is the trouble. Within the past few years too many wildcat companies have secured the use of the names of good trust companies for advertising purposes by paying the small fees for transfer and registry of their securities. It is time that the trust companies cleared this mud from their boots. The small profits to be gained do not by any means compensate for the loss of prestige that must inevitably follow if carelessness continue.

In some few cases this small error has assumed a more flagrant nature. Some of the trust companies have a so-called "trust officer," who becomes a director of the companies that employ the trust company as registrar or transfer agent. His name and office are loaned to the advertising of the companies. In three cases that have come under my observation in the past year, flagrant crimes against the investment public have been assisted by such method. That, I take it, comes close to connivance at swindling. No self-respecting trust company should allow it.

The work of the real-estate department and the certification of bonds and mortgages, quite generally carried on throughout the United States by the trust companies, is largely legitimate. I do not, of course, believe in giving to either banks or trust companies the privilege of becoming real-estate brokers. It is a business into which must enter too much personal discretion, and far too much chance for speculation under the guise of investment. If one care to study the records of failed trust companies in Philadelphia and in New York alone, it will be strikingly evident that in many cases the trail of real-estate speculation lies across the record of the catastrophes. Title insurance and certification, for fees, is a directly remunerative and not at all speculative function, quite within the proper province of the trust companies.

The old-fashioned trust companies in New York do not attempt to invade the province of the savings bank. Yet there are many of our trust companies that do make a serious attempt to attract the deposits of people of small means. Some few have resorted to methods that are decidedly reprehensible. Some, even of the most conservative trust companies in New York, have made a bid for small accounts by paying interest on balances of $100 or more. In one, at least, an account may be opened with one dollar, and the smallest saver of money is bid for by means of a little hand-bank, in which to save pennies, dimes, or quarter-dollars. The small sums so saved may be placed in the trust company, which uses them at its discretion, under the general banking act.

It is a good thing to encourage savings. It is not a good thing for the trust company to thus take the place of the savings bank, for the gap that separates the state banks and the trust companies from the savings bank is a wide one. Commercial disaster, official misdoing, tight money, have wrecked the trust companies at times. From such causes the savings bank is practically immune—first, because it is controlled by its depositors, and cannot fall under the influence of speculative financiers; second, because it is regulated as to its investments by the extremely rigid laws of the state.

Trust companies are stock companies. They are not bound by the savings-bank law in the investment of their savings deposits. Therefore—surely it is indisputable—they should not be able to compete for the savings deposits of the people. This is recognized fully by the law itself, which allows the savings banks to make deposits in trust companies, but at the same time provides that such deposits, in case the trust company shall fail, are "preferred"—that is, must be paid before the general depositors get anything.

Our state banks are worse offenders than our trust companies in the open bidding for savings-bank deposits. I quote from a recent advertisement by one of the offenders:

DO YOU UNDERSTAND BANKING BY MAIL?

Four per cent paid in the interest Department. You can open an account in this department with $1.

I do not believe that the class of depositors to which that advertisement would appeal, and does appeal, is the class of depositors who should patronize a commercial bank. Nor do I believe that the laws of New York State

contemplate such advertising on the part of a state bank.

In proof of this position, it is as well, perhaps, to cite the fact that the Hamilton Bank, which closed its doors during the panic, was a state bank which had an "interest department." When that bank closed, the small depositors of the department discovered that they were in no sense "preferred" over the commercial depositors. They take their chance in the liquidation of the bank, just the same as though they had been commercial depositors, with money in the bank so that the bank would look out for them in the making of commercial loans.

The attention of Governor Hughes and his new banking committee is earnestly called to this point. It might not be considered impertinent to suggest that the state of Connecticut put upon its statute books at its last session a small law covering this point, one worthy of being copied in this state. This law provides that trust companies which have savings departments must invest such deposits only in securities that are authorized for savings-bank investments. It further provides that such investments shall be for the sole and exclusive protection of these savings deposits, and not for the general deposits. This law might well be applied both to trust companies and to state banks in all states. It would broaden the usefulness of the trust company and the bank, and at the same time remove the danger of such broadening.

Outside of New York and Massachusetts, this apparent criticism of the establishment of "savings departments" in commercial banks and trust companies loses much of its force. Missouri, for instance, has a savings-bank law, but no savings bank, unless, indeed, one has recently been established in St. Louis. The trust companies practically do the savings-bank business of the state. They have done it very well, so far. Similarly, Ohio and Illinois, two of the richest states of the Middle West, boast a system of savings and trust companies that has been a successful substitute for the widespread savings banks of the Eastern States. Yet, in Ohio at least, the savings depositor is not "preferred" as to assets in case of failure. This whole question of savings banks and the substitutes therefor will be taken up in detail in a subsequent article.

In passing, however, it is as well to say that from the Atlantic to the Pacific the trust company and state banking laws need a thorough overhauling. Merely to illustrate, the following quotations will suffice:

Mr. Charles McKee, of the Mercantile Trust Company, Little Rock, Ark., said to the Bankers' Association:

"We have one law in Arkansas that is called a trust company law, which is wide open at both ends, authorizing trust companies to do any and all kinds of business. It is authorized to act as administrator and guardian and to buy and sell real estate and to conduct a savings-bank business."

Mr. W. G. Brown, of the Rhode Island Hospital Trust Company, of Providence, R. I., makes the following significant statement:

"The laws in our state regulating trust companies are somewhat open; or, I might say, perhaps, that they do not exist at all to any extent, and there are not much of any laws. . . . With only a few exceptions the control of the national banks in Providence is lodged with the trust companies."

These statements, be it noted, were made by trust company officials, talking to the trust company section of the American Bankers' Association, in 1906. They will serve to indicate to the reader the crying need of banking legislation in those two states. And those two states are no worse than twenty other states. In fact, there are not half a dozen states in the Union to-day whose laws governing state banks and trust companies adequately safeguard the depositors. In Ohio, for instance, where the trust companies have built up a tremendous business, these institutions incorporate under three separate laws, the savings and loan act, the safe deposit and trust company law, and the old state bank law. Inspection by the state has been, in the past, practically nil. Because the strongest, cleanest, and most conservative men in the state have turned their hands to banking, the lack of adequate legislative assistance has led the Ohio companies on from strength to strength, so that to-day it is difficult to get popular backing for any attempt to change the laws. It is a peculiar position, unique in this country.

Enough has been written here, perhaps, to indicate along what lines the people must work for the salvation of the country. That there is need of wholesale reform, no man may well deny. If one looks for proof let him go study the receivership of the Real Estate Trust Company of Philadelphia, the Knickerbocker Trust Company of New York, the Oregon Trust and Savings, of Portland, Ore.

WHAT GERMANY CAN TEACH US

CITIES THAT HAVE BANISHED UNSIGHTLINESS, AND STREET-CARS IN WHICH THE PASSENGER IS A GUEST—THE CULTIVATION OF A TASTE FOR MUSIC AND OUTDOOR LIFE

BY

ROBERT HAVEN SCHAUFFLER

WHY are American cities worse governed than German cities? Why are they in many ways so much less modern and comfortable and beautiful? It is not because we lack the progressive spirit or the wealth, the love of comfort or the sense of beauty. The cause may usually be traced to a disrespect for law, to a laxity of discipline, to an insufficient public control of public utilities and beauties. The Germans have too many laws, and they respect them. We, too few, and do not respect them. There is something of the slave about them; something of the anarchist about us.

The first thing that strikes one in a German city is its varied, unmonotonous uniformity. All buildings are planned and built under a skilled, municipal supervision that has an eternal eye for the utility, the safety, and the beauty of the whole rather than of any of its parts—a supervision that protects the architecture of other centuries and tries to keep the new from clashing with the old. Munich is an admirable example of how fully the architecture of a city may express the spirit of its time and yet be composed, under efficient supervision, into an artistic whole, the separate structures forming but the single stones in the master-builder's huge mosaic. Here the latest thing in Art Nouveau is not often allowed within fighting distance of the Renaissance. The Marienplatz, for instance, is a fine example of how later architecture may be made to harmonize with earlier.

Teutonic thoroughfares are models of cleanliness, and Cologne is the only German city of my acquaintance whose slum streets are not as well-kept as the best pavements of our cleanest cities. This condition is the result of a day and night cleaning force with an hereditary hostility to filth. (It seems to many of us that America shows more humor than good faith in entrusting its streets to the sons of one of the dirtiest nations on earth.) The German uses much water on his pavements, and is beginning to install effective motor sprinklers, which, with the new motor fire-engines, have passed beyond the stage of experimentation.

The German is earnestly trying to eliminate the ugly from his land. The electric accessories of his streets no longer offend the eye and, in cities like Hamburg, Munich, and Berlin, the avenues of candelabra-like trolley posts crowned with arc lights are charming additions to municipal beauty. Instead of those American boxes for waste-paper, which resemble garbage cans gone wrong, the German has a pleasant, vase-like affair with good lines, made of iron strips, and fastened to a trolley or lamp-post or telegraph-pole.

The average news-stand is an eye-sore in America, but over there they realize what an important factor it is in the street-scape. And many of these booths are as attractive in their own lyric way as the buildings of Alfred Messel, in their epic way.

Street advertising is almost entirely confined to pillars at street corners, and offensive "ads" are classed with offensive smells. There are no billboards to mask the litter of vacant lots, to harbor criminals and refuse, to communicate fire, to cheapen and disfigure a beautiful thoroughfare with the atmosphere of Pale Pills for Pink Livers, or to replace the loveliness of meadow and forest and winding stream by a stage-setting lurid with the glories of Father O'Sweeney's Dime Consumption Cure. Even lights are regulated. Among all the German cities, Hamburg is the only one whose evening beauty I have seen actually marred by the luminous sign.

In Berlin, the stations of the elevated railway have actually been designed with an eye to

the beauty and character of the street. The less sightly parts are hidden by rows of trees; the posts and girders are gracefully designed. It makes one think with a heartache of Sixth Avenue, New York.

The German system of public convenience stations compromises between the publicity of the French and Italian and the rarity of the American stations. Most of them are accessible, private, hygienic, inexpensive, and neat. Our shortcomings in this respect have greatly stimulated the saloon business, but reform is already being agitated in some of our larger cities. In this matter we have much to learn from Germany.

Garbage and ashes are removed from the houses in closed cans and, by an ingenious mechanism, dumped into specially constructed wagons without exposing their contents to the air, thus doing entirely away with dust and odors. Although this method, if we adopted it, would bear heavily on the wretched army of scarecrows who prowl hungrily through our streets at dawn, burrowing into the garbage for a morsel, it might stimulate us to grapple more efficiently with this distressing question. The mendicancy problem is one which the German has solved. I have never seen a beggar in any German city except Cologne — a western city, touched by French influence — and every street in the Prussian capital is as safe as Unter den Linden.

The German is not willing that his ear should suffer any more than his eye or his nostrils. He is absolutely intolerant of unnecessary noise, for he wants to keep his nervous system normal. The discordant cry of the newsboy, the sempiternal steam whistle of the peanut-vendor, the over-exuberant solo on the street-car gong, the whine of the beggar, the bell and bugle of the scissors-grinder—all these are conspicuously absent. In point of fact, the law even forbids you to warble Schubert or whistle Brahms on the public ways. This is going radical lengths in such a musical land, but the tyranny has its justifications.

What most humiliates my American soul in the Fatherland is the street-car, for there is no German village large enough to own an electric line whose cars are not more comfortable and more smoothly and efficiently run than the cars of any American city that I know. There the tram does not stop at every cross-street but only at the designated stopping places, which are 219 yards apart. These places are marked by posts, often bearing enameled shields giving the number and route of every car that passes that point. This system of stops annoys an American at first, but he soon realizes that it enables him to travel with far more speed and comfort and with less nervous waste than in the trolleys of New York, where he hangs from a strap in a struggling crowd, is jolted twice at every other cross-street, and is exhorted roughly by a grimy conductor who is often in rags.

In German cars no one is allowed to stand in the aisles and only a definite number are accommodated on the platforms. The cars are gradually stopped and started without jerks and the apparatus enables the motorman to run very slowly and smoothly without the alternation of stop and jolt and lurch which marks the wake of the obstinate American ice-wagon

I have often inquired the cause of this trying phenomenon and the men always tell me that the apparatus will not run the car slowly. One failing of our motormen, though, is not due to the machinery. Any German motorman who should start his car abruptly would be at once denounced by a carful of indignant passengers, and would lose his place within twenty-four hours. I once sent such a denunciation to the Interborough Company of New York and received a most courteous reply from some high official, who was as grieved and surprised as any official could be, saying that it was bad for the machinery, was strictly against orders, that the motorman would be called to account, and that he believed the painful circumstance would never occur again. I have since learned that this official has a reputation for humor.

In Germany the nervous ringing up of fares is replaced by a system of receipts, which are occasionally checked by an inspector. The conductor and motorman are clean, neatly uniformed, and, as a rule, courteous. At least, they make a point of assisting women with parcels and children, not merely punching them in the back. In a number of cities like Brunswick, Dresden, and Hildesheim, each car is provided with a clock, and the daily newspaper hangs on a hook for the use of the honored "traveling-guests." Passes which save money and trouble are available on all lines, and the public safety is so highly regarded that the law against boarding a moving car is enforced in several cities. I

remember jumping upon a passing tram in Cologne. The conductor remonstrated with melancholy dignity. I smiled and considered the incident closed, but at the next stopping-place he ordered me off the car, according to law. In consequence of such rigor there are scarcely any trolley accidents in Cologne.

Tickets for subway, elevated, and suburban trains —as well as *Bahnsteig* tickets admitting one to train platforms—are sold by slot-machines — a device that would save much crowding and delay in our country. Change is even made by machinery, and I should not wonder if the slot-machine would eventually displace the ticket-seller and reduce the expense of subway and elevated lines both to operator and to passenger.

The punctuality and safety of German transportation is due to a progressive spirit in the matter of safety devices and to governmental investigation of accidents, as well as to the quality of the employees — who have all been educated in the army and brought to a high level of discipline. No man without a good army record can win a position on tram or railroad; and, once he is dishonorably discharged his outlook is dark indeed. Such a school for employees is impossible in our country, but better conditions would immediately follow the growth of a strong public sentiment in favor of clean, neat, courteous, careful, thoughtful, and skilful motormen and conductors. In short, we ought to revolt against being carried by a set of amateurs.

Opinions differ widely about the merits of the European compartment car. For my part, I prefer its opportunities for privacy, its better ventilation, and its easy access to the platform. But there is no doubt that a German sleeping compartment, even of the second-class, is more comfortable than the clumsy, curtained, head-cracking arrangements of our Pullman berths — so public and so far from the lavatory.

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THE ELEVATED RAILWAY ON BÜLOW STREET, BERLIN

Artistic trestles and rows of trees along the line make a sharp contrast to elevated lines in New York

Germany's contribution to educational science is too well known for the mention of any but a few of the latest refinements. A city like Mayence is typical of the recent advances in school hygiene. There are shower-baths in the basement of each building for boys and for girls. Each child is expected to bathe at least once a week. He is furnished with a cake of soap, a towel, and trunks; and there is room for

fifty to bathe at once. Besides this, there are free swimming lessons in the Rhine for all that wish them. The floors of the schoolrooms are covered with lattice-work, which allows little shoes to dry more quickly on rainy days. The pupils' books and implements are furnished free on the demand of the parent, as well as a light daily luncheon, and it is said that most of the pupils do not know whether their parents pay for them or not. The belief that prevention is better than cure is thoroughly entrenched in the philosophy of the German, and in his practice as well. There is a considerable corps of school physicians in Mayence, and, every two weeks they measure, weigh, and examine each pupil. The sick and degenerate are sent to a large and completely equipped orthopædic institution and there treated free. Children who stammer or pronounce imperfectly receive individual training.

It is good to know that we are preparing to imitate one of the best features of German university life and to encourage the migration of students — especially of graduates — from one university to another. It is to be hoped that the tragic fate of our foremost composer, Professor Edward MacDowell, may stir public opinion to relieve the creative men in our faculties of their undue burdens of class-room and committee work, and give them the large, fertile freedom of the German "docent."

The Fatherland has taught us even more about music than about teaching, and still sends us the bulk of our orchestral musicians and virtuosi. But we have yet to learn from its devout audiences how to listen to music: how to create that *rapport* between performer and hearer without which the greatest music is impossible ; and how to keep the concert atmosphere untainted by the profanity of whispering and foot-tapping and flippancy. In Berlin you may hear the Philharmonic Orchestra perform a symphony programme for ten cents, while eating your supper among a crowd quieter than a Kneisel Quartet audience in New York. We Americans have two orchestras, two operas, and a string quartet which are among the finest, if they are not the finest, in the world. But there are few cities in Germany too small to have their orchestra, their opera, their quartets and singing societies. Good music is a necessity to them, a luxury to us,

Courtesy of *Motor*

THE HANOVER FIRE DEPARTMENT RESPONDING TO AN ALARM

Courtesy of *Motor*

AN AUTOMOBILE FIRE DEPARTMENT ON THE WAY TO A FIRE

Germany's most important contribution to the art of building in recent years is in its commercial architecture. Alfred Messel started the movement by building Wertheim's beautiful department-store in the Leipziger Strasse, in Berlin — an achievement followed there by such notable structures as the Store of the West, the Rheingold restaurant and the offices of the *Allgemeine Zeitung* in Munich. These buildings clearly show their structure and their character, dispensing with opaque walls in the Gothic spirit. They are made of such rich materials as shell limestone, and what they have of ornament is of superb quality. Everything about Wertheim's is in admirable taste; shopping is made less sordid by a lovely statue here, and a garden there, where one may rest among trees and flowers, attending to nothing but the plash of an exquisitely sculptured fountain. The artistic influence of such a store set in one of our "strictly business" streets would be a fine educational influence for that passionate shopper, the American woman.

The arts and crafts movement has taken deep root in German soil, and the Germans are determined to make everything about them as beautiful as they can. The numerous exhibitions of painting, sculpture, architecture, and handicrafts are thronged by all classes of people and are of inestimable value in cultivating the public taste. During last summer I saw such exhibitions in Munich, Berlin, Mannheim, and Düsseldorf. The

Courtesy of *Motor*

AUTOMOBILE HOSE-CARTS OF THE HANOVER DEPARTMENT

WHERE THE STREET-CAR STOPS
The numerals on top show what cars pass this point; the small signboards tell where each car goes

first two of these outranked the average Parisian *salon*, while the others surpassed any in America except the international exhibition in Pittsburg.

The museum habit is widespread, and a German town no larger than Lakewood, N. J., would feel disgraced not to possess a gallery of painting, sculpture, antiquities, and casts as representative as that now in any American city ten times its size. The idiotic tariff on ancient art which has prevented the growth of our museums is to the Germans an indication that we are not quite "all there." When we mention it they grow embarrassed and change the subject. But among themselves they look knowing, tap their foreheads, and flutter their fingers.

In theoretical medicine the German leads the world, though the American is more brilliant in the practical application of German discoveries. The Virchow Hospital in Berlin incomparably surpasses the Mount Sinai in New York, our finest American hospital. It is built on the new pavilion system and consists of thirty buildings set in charming grounds and connected with a large private park. One building is reserved for the department of pathology, whose chief is far greater than the pathologist of any American hospital, where this important department is usually restricted to one small room. The same international ratio holds in regard to hospital bathing facilities.

Germany's state subsidizing of laboratories in its largest chemical industries is another indication of regard for the value of creative work.

EVEN THE WASTE-PAPER RECEPTACLES ARE MADE IN ARTISTIC DESIGNS

AN ATTRACTIVE NEWS-STAND

There is a comprehensive system of workingmen's insurance and pensions. Practically all German workmen are insured against accident and sickness, and are pensioned by their employers when no longer able to work.

Baths and even recreations are furnished them. At the Krupp Cannon Works, for example, not only are tennis courts provided for employees, but also (for the different grades of Krupp society) a gymnasium, a golf course, a polo field, canoes, fencing rooms, riding horses, and a circulating library of 52,000 volumes.

Huret says that the administration of the German postal, telegraph, and telephone systems is the first in the world for order, regularity, and the multitude of services which it renders to the public. For $5 a year

A STAMP-VENDING SLOT-MACHINE EQUIPPED WITH THREE KINDS OF POSTAGE-STAMPS

anyone may establish his own letter-box and fix the hours of collection. He may register a letter in his own office. He may send and receive packages up to ten pounds in weight c. o. d. at a trifling expense. There are many little conveniences in German post-offices, such as a letter-scale which anyone may use, slot-machines for the sale of stamps and for making change, notices over letter-boxes: "Do not forget stamp and address," and polished brass trays at the door with numbered grooves where you may leave your half-finished cigar before entering the warm, well-ventilated, smokeless interior. Berlin's *Rohr-post* should commend itself to the hustling spirit of America. One may write a six-cent post-card full and have it delivered within the hour by pneumatic tube and mounted messenger anywhere within the city limits.

AN AUTOMOBILE STREET-SPRINKLER ON UNTER DEN LINDEN, BERLIN

Postal money orders are surprisingly cheap and the cash is brought to you by a messenger; or you may order it placed to the account of a creditor. The postal banks are very popular and not only do an immense banking business, but also carry on an active accident, sickness, and age-insurance business among the lower classes. The people have implicit confidence in these banks and they do much to encourage thrift. If a workman, in a virtuous moment, decides to put by a little money regularly, he simply notifies the bank and every week, on a certain day and hour, the collector comes to give him a receipt for his dime.

What is more, these banks are actually made to pay dividends and, on the revolutionary principle that what the money of the poor earns should return to the poor, these profits are divided between unemployed girls, needy women, fresh-air funds, public baths, halls

A GERMAN ASH-CART THAT SPREADS NO DUST

where workingmen may meet on winter evenings, and so on.

The state operates the telephone service and it is unexcelled for speed and accuracy. In certain cities one has the right to complain if he is kept waiting more than thirty seconds for a connection. For twenty-five cents a month you may establish a direct, permanent connection with the doctor, the fire department, or the police and call them immediately without the services of "central." They are now trying a device by which messages are received and automatically written at the other end of the line at those trying moments when "party doesn't answer." The telegraph is also a Government monopoly and the usual message sent from any post-office or railroad station costs twelve cents to any part of Germany or Austria. It is possible to prepay a reply.

Though the Germans are not athletes in the Anglo-Saxon sense, they know how to live a sane, healthy, delightful life out of doors. As a rule, the whole family goes into the country for the week-end—an adventure which would be both expensive and uncomfortable for most dwellers in American cities. But the German has seen to that. Suburban travel by trolley and train is incredibly cheap, and his out-of-doors is completely furnished with restaurants and milk-houses and homely, comfortable inns. One may shoulder a *rucksack* and tramp through the barrenest part of the Fatherland with a certainty of better bodily entertainment than in a walk up the Hudson. Germans are famous walkers and the *rucksack* habit has so taken hold of them that a large part of the population flocks in vacation time to the Hartz, to the Thuringian, or the Black Forest, to the Giant Mountains, the Bavarian Highlands, or Saxon Switzerland for a few precious days of "mountain-scratching," as they love to call it. Their leather-strapped bags of canvas are not eyed askance by even the most bureaucratic of hotel porters. But I shudder when I imagine the fate of a *rucksack* in the St. Regis.

A TYPICAL STREET CORNER IN A GERMAN CITY

Clean streets, trolley posts crowned with candelabra of arc lights, and trolley wires supported by an arch

RUDYARD KIPLING

THE FIRST WRITER OF ENGLISH TO RECEIVE THE NOBEL PRIZE FOR THE MOST DISTINGUISHED LITERARY WORK OF AN IDEALISTIC TENDENCY

BY

W. B. PARKER

THE award to Mr. Kipling of the Nobel prize brings him again to the centre of the stage. The prize is awarded for the best literary work as regards idealism and is now given for the first time to a writer of English. It has been bestowed upon M. Sully-Prudhomme, Th. Mommsen, Björnstjorne Björnson, Henry Sienkiewicz, and jointly upon Frederic Mistral and José Echegaray. Its bestowal upon Mr. Kipling may fairly be taken to indicate the opinion of the eminent judges that he is not only an idealist, but the foremost writer of English.

For myself I have never had any doubt on either point since I read "Plain Tales from the Hills" in a worn, paper-covered edition at school nearly twenty years ago. His idealism needs no other evidence than the enthusiastic following he has from boys—indeed from children of all ages. Few would question the implication behind the decision of the Nobel prize committee that Mr. Kipling holds the first place among living English writers. His immense personal popularity so far exceeds that of any of his contemporaries as to admit no comparison; his influence upon current thought and behavior is not to be calculated. In fact, he has become a popular ideal in literature, as Sargent is in painting, and President Roosevelt in politics. Not to have heard of Mulvaney and Mowgli, not to know the refrain of "The Recessional," is unthinkable.

Yet Mr. Kipling is the most baffling of writers. His methods from the first have been so audacious as to leave nearly all the critics bewildered, and it is a mark of Mr. Charles Eliot Norton's unequaled acumen in criticism that he should have recognized Mr. Kipling's genius so early. I recall the start of surprise in a large audience, more than ten years ago, when Mr. Norton proclaimed the author of "M'Andrew's Hymn" a worthy successor to the throne of the great English poets left vacant since the death of Tennyson,

The baffling element about Kipling's work is its apparent crudity, which has lately been so admirably put by the French critic, the Vicomte de Voguë. He has been speaking of the great masters of literary tradition:

"But now," he continues, "a savage bursts in upon this circle of conventional worthies; no mere academic figure garbed as a savage to attract attention, no mere 'Touranien' of the École Normal or 'Apache' of the Batignolles, but a natural savage of honest hue. He gets his literary effects only by new and direct impressions, from the accidents of an adventurous life in for-

MR. KIPLING'S SUMMER HOME
"The Woolsack," "Groote Schuur," in South Africa

eign lands. He invents, like Homer and the Bible, his modes of utterance. His similies are never stereotyped; they are drawn from things he has with his own eyes beheld. His descriptions of scenery are not descriptions, they are instantaneous impressions received in a glare of light upon an infinitely sensitive photographic plate. He has the feeling of a primitive. Let us confess it — this savage pleases us because he rouses and looses the old barbarian that is in every one of us.

"To be sure we shall afterward come back to the noble educators who have polished our intellects and to the wonted masters of our thoughts and our dreams. I imagine that Kipling would charm me less if I were living under Napoleon amid excesses of brutality. It was healthful in those days to read 'The Genius of Christianity': otherwise a man might have become altogether coarsened. In our day it is safe to declare: 'Read the barbaric Kipling, just as you take iron when you're anæmic, whenever your brain is getting overfed.' To rëestablish balance and mental health a man must run counter to the current of his age: it is very bad policy for a writer, but it is sound hygiene."

The disposition to treat Kipling's work as if it were crude and easy is one that ought by this time to have been cured. There is, as a matter of fact, no more careful or conscientious artist alive. When the newspaper reporters tried to interview him on his return to New York in 1899 all they could get out of him was: "Every effort of art is an effort to be sincere. There is no surer guide, I am sure, than the determination to tell the truth that one feels." But long before that, in "The Light That Failed," he had preached it by the mouth of Dick Heldar, who is not difficult to recognize as Rudyard Kipling. "All we can do is to learn how to do our work; to be masters of our materials instead of servants, and never to be afraid of anything. But the instant we begin to think about success and the effect of our work—to play with one eye on the gallery—we lose power and touch and everything else." It was by Dick Heldar's mouth, too, that Mr. Kipling answered the familiar accusation that he is a barbarian and a facile painter of easy scenes. "I sold every shred of canvas I wanted to," says the scornful young artist, "and on my word, I believe it was because they believed I was a self-taught flagstone artist. I should have got better prices if I had worked my things on wool or scratched them on camel-bone instead of using mere black and white and color." There is no escaping the contempt of that, and it is as applicable now as it was fifteen years ago, for there are still some who profess to that believe Mr. Kipling is but an accident whose success is not based on a clearly conceived theory penned with the true artistic passion for perfection.

His devotion to his work runs through all his writing; it is humorously expressed in the slight verses, "Mulvaney Regrets," sent in response to an invitation to attend a Yale banquet:

"The honest fact is that daily practice
  Av rowlin' inkpots the same as me,
Conshumes me hours in the muses' bowers
  An laves me divil a day to spree."

"When you grow oulder an' skin your shoulder
  At the world's great wheel in your chosen line,
Ye'll find your chances as time advances
  For takin' a lark are as slim as mine."

It is more earnestly put in the dedicatory verses printed with "Life's Handicap" in 1891:

"By my own work before the night
  Great Overseer, I make my prayer.

"If there be good in that I wrought,
  Thy hand compelled it, Master, Thine:
Where I have failed to meet Thy thought,
  I know, through Thee, the blame is mine."

But no one who has ever seen a page of Mr. Kipling's manuscript or proof needs any further evidence of the toil and patience with which he pursues the elusive image he is striving to fix. The page is scored, interlined, marked, and crisscrossed with erasures, changes, elisions, transpositions, until often scarcely a fifth of the original remains unchanged, and it is to be remembered that the first copy represented the residue of a much larger output; for Mr. Kipling admits throwing five-sixths of all he writes into the waste basket. If I were to venture an opinion as to Mr. Kipling's shortcomings I should say they were due rather to an artistic theory followed too rigorously and over-closely. The doctrine credited to him, that every word is a picture and that the aim of the author is to put on the page the picture that is in his own consciousness, seems to contain the secret of his power and his weakness.

Anyone who will re-read "Kim," "The Light That Failed," and "The Naulahka" will be impressed—perhaps it is not too much to say oppressed—with the thronging visual impressions which crowd the pages. "Kim" leads you across sun-drenched landscape

where every figure stands out in brilliant unshaded color, like that picture by Verestchagin of the temple at Delhi, which so glares and blazes in the full noon sun that even in the midst of the art gallery one looks for an umbrella or the shade of a friendly tree. The eye is overworked in Mr. Kipling's stories. The pages remind one of the pictured walls of ancient cities. Always it is image, image, image; whereas the memory, the ear, the backward reaching and reflective mind is often untouched. May we not say that the heart remains too often untouched? Mr. Kipling's prose is like Mr. Sargent's painting. Both are prodigiously clever. Their craftsmanship is unapproachable and their versatility seems boundless. There is in both the same magnificent sweep, the etching stroke, the revelatory line drawn as with a scalpel that penetrates to the marrow of the subject, disclosing with a caricaturist's genius the very soul behind the form, and in both there is the same magnificent opulence of color. Yet after an hour spent before Mr. Sargent's canvases, how gladly one turns to the deep restful tones and shadows of Rembrandt, or the calm validity of Reynolds, whose substantial figures seem to offer life-long friendship.

Who of us can read Esmond or Copperfield with dry eyes? But you may read "The Light That Failed," "The Naulahka," and "Kim" with only one risk of tears — which is the passage describing Kim's recovery, where the dearness of earth and the tenuousness of life are put so touchingly as to bring a catch to the throat.

Perhaps the failure to touch the heart is even more apparent in the poems, which are now more available for careful examination in the single volume, "Collected Verse," issued last fall. On re-reading the old favorites, what is most striking is the appeal to the moral sense, and the insistent note, the note of immediacy, of exhortation, of urgency, whether of perception or of action. The old note, of recollection, of reverie, of abstraction, which once had all the vogue, is not here, as in fact it seems to be seldom heard in our recent poetry. There is little appeal to sentiment. We are all for action now. Yet the old note had its claim and the ear will yearn for it. Mr. Kipling gives us no "Elegy in a Country Churchyard." Lingering cadences and backward glances are not in his books. His greatest admirer cannot find a phrase to cling in the memory like the great lines from Milton of which Matthew Arnold was so fond, nor again like Shakespeare's gorgeous phrase, "incarnadine the multitudinous sea." Nor yet like Wordsworth's

> "Will no one tell me what she sings?
> Perhaps the plaintive numbers flow
> *Of old, far-off forgotten things*
> *And battles long ago.*"

Mr. Kipling is no priest of beauty, living in the joy of adding perchance a line to the age-long litany of her worship. The delight that Keats and Shelley found in the dying fall of an exquisite line, the full, rounded melody of perfect epithet wedded to flawless noun—that is not for this strenuous master of the lyre. There is a rugged energy and a Puritanic austerity about Mr. Kipling which makes him rather the priest of duty, the apostle of efficiency, the prophet of work than a worshiper at the shrine of beauty.

The parallel between his prose and his verse is interesting. The prose has a certain hardness of effect because of the predominance of visual impressions; the verse has a certain severity because of the strongly moral quality of it. This no doubt will seem strange to many lovers of Mr. Kipling's verse who have enjoyed in it a quite different note—the note of delight in mere action, movement, and episode. They, too, are right. The author of "The Recessional," "M'Andrew's Hymn," and "A Song of the English" is also a master of balladry. Witness "The Ballad of East and West," "The Merchantmen," and "Tomlinson." But these only illustrate the breadth of the poet's horizon. A second glance will show that of the three ballads just mentioned two have their moral. In fact, making allowances for his devouring eye and all-portraying hand to which the whole world is but material, the pervading influence in Mr. Kipling's verse is his moralizing zeal.

The judges who awarded the Nobel prize made no mistake. The world does not contain a more impassioned idealist than he. Leaving out of account for the moment his recent poems which have been so greatly affected by patriotic purpose, consider how large a part of all his poetical work has had a moral intent. He has been in fact preacher-at-large to the English-speaking peoples, celebrating with admonitory comment their triumphs, scoring their weaknesses, castigating their sins, interpreting their nature to themselves, and striving with a

passionate earnestness to imbue in them the spirit of devout and instant efficiency.

THE GOSPEL OF KIPLING

He has written "The Feet of the Young Men," "The Long Trail," "To the True Romance," and "The Song of the Banjo," which have life and movement, swing and rhythm, and lift of the heart enough to make the total capital of half of our present-day poets. But consider the body of his work and see how its burden is that of the preacher. When his appeal is to the nation it is in the full tones of the "Song of the English":

"Keep ye the Law — be swift in all obedience, —
Clear the land of evil, drive the road and bridge the ford.
Make ye sure to each his own
That he reap where he hath sown;
By the peace among Our peoples let men know we serve the Lord!"

When he is addressing himself to the individual, as in "The Wage-Slaves," the underlying elements on which his gospel depends are enforced, illustrated, and brought home in a way which does credit to his devout evangelical grandfather. It is sound doctrine, needful everywhere—how needful here and now some of our financial authorities can best tell:

"From forge and farm and mine and bench,
Deck, altar, outpost lone —
Mill, school, battalion, counter, trench,
Rail, senate, sheepfold, throne —
Creation's cry goes up on high
From age to cheated age:
'Send us the men who do the work
For which they draw the wage.'

"Words cannot help nor wit achieve,
Nor e'en the all-gifted fool,
Too weak to enter, bide, or leave
The lists he cannot rule.
Beneath the sun we count on none
Our evil to assuage,
Except the men that do the work
For which they draw the wage."

KIPLING, PROPHET OF ENGLAND

To emphasize the patriot and the moralist in Mr. Kipling is not to diminish the poet; his reputation as poet is secure. It is rather to point out that he is true to the great succession of English poets who, from Chaucer down, have been moralists and exhorters to their people. It is to call attention to one of the sources of his power and promises of his permanence. The purely lyric gift soon passes. The poet who is no longer young must ground his claim to regard on other appeals than that to the ear and the delight in verbal magic. He must lay hold upon the hearts and consciences of his hearers. In doing this Mr. Kipling is already preparing himself for the place held by Milton, Wordsworth, Tennyson — the place of his people's prophet.

Is it not interesting to see how naturally one falls to talking of Mr. Kipling's future? Here is an author who has to his credit twenty-five volumes and we fall readily to talking of him as if his work were only just begun. That is a singular tribute to the power of the man — to the illusion he never fails to give of youth and happy promise.

THE NOVEL THAT IS TO COME

The fact is that Mr. Kipling's readers can never give up the hope of seeing a book of his vastly greater than anything he has yet done. All his novels seem rather to be studies than achievements up to the measure of his power. There is a novel which many of us are waiting for: the novel of black and white in India; the novel forecasted in "Beyond the Pale" that exquisite little tragedy in "Plain Tales From the Hills"; forecasted again in "Without Benefit of Clergy," and more fully prepared for in "Kim." It is a great novel, beyond the power of anybody now writing except the author of "The Jungle Book" and "Puck of Pook's Hill." He has made us expect great things and it is this mood of expectation, of eagerness for "something evermore about to be" which prevents any reasonable attempt to give a final appraisal of Mr. Kipling's work. How can we appraise his work when we are still awaiting the book that is to crown and complete his previous efforts? With an industry and method which rival Tennyson and all great producers, and an invention as fertile as Scott's, there is nothing which seems impossible to him. What he will yet accomplish depends, we believe, on how far he is Anglo-Indian —precocious, early-ripening and early spent; how far true English—like the oak, slow to mature and strengthening with time. If he be like the oaks in his Sussex home and can fall back now in his prime into the steady working stroke of the elder masters of our literature, no expectation which we can frame will be unreasonable.

MR. KIPLING IN FRENCH

BY

LOUIS FABULET

WHO HAS TRANSLATED MANY OF MR. KIPLING'S STORIES INTO FRENCH

IN THE spring of 1898 an English poet with whom I was dining one evening in Paris mentioned to me the name of Mr. Rudyard Kipling, which I heard then for the first time, and advised me to read "The Jungle Book." The next day I bought the book and read it through in a single evening. Ah, the joy of turning those pages, one by one, of being able to prove to myself that during my own lifetime there were in the world men still able to create beautiful things! In France we had not a genius, not a true creative artist, not a spontaneous poet whose power of thought was sufficient to awe the soul of the world and to communicate a sense of universal emotion. There was much talent—more talent and pretension than ever were seen there—but not a singer able to sway the multitudes and to revivify mankind with a new and fresh breath; and I could discern none such about to arise. And France knew not the foreigner, Rudyard Kipling. It knew naught of the store of freshness and novelty, of power and of sanity, in the inspiration of the young Englishman whose name had been renowned for years throughout the rest of the world.

The next morning I installed myself at a desk and, though this sort of work was new to me, labored with the aid of one of my friends at the translation of "The Jungle Book." Never shall I forget the joy of the hours spent at this work. As a child I had never been able to feel myself much attracted toward the animals which men made to talk; but now Rudyard Kipling had found the secret of arousing my interest—my interest, do I say? My wonder and my ecstasy.

THE BIBLE OF THE WORLD

Here was nothing false, nothing unreal. Nature herself was singing. It seemed as though I were reading the Bible of the world. In Mowgli I saw a new Adam, born again into a new earthly paradise—a charming, lovable Adam, nourished only by Nature's counsels and imparting these counsels to me in turn. This manling seemed to have passed through a purifying fire and, freed from all which evil and falsity may inject into mankind in the hodge-podge mass of what we call civilization, heard now only the voice of God and made me spell anew the word Life, and love it with a new fervor. And all this in the teeming cradle of life, in that India which tradition says is the cradle of mankind, in that jungle where life clamors, calls, and bursts forth from the soil with a mighty impetus. Sometimes I seem to believe that Rudyard Kipling—the creator of Mowgli, the singer of all the manifestations of terrestrial life, the dispenser of force — is a sort of Antæus, and that this young Englishman, brought up and nursed in India, in touch with the mother earth, has had renewed in him the pristine vigor, the red blood, and the sinews of steel, the lofty mind and the clear-sighted conscience, and has sprung up again to revivify the youthful energy of the world.

"The Jungle Book" (which dates from 1894, but which in 1898 was still unknown in France), which by a chance I happened to read, at the first reading produced upon me an impression of exceptional power and in a single instant I realized the masterliness of it. It took me back to the primeval consciousness of things, to that feeling for right which naught can swerve; it made me feel as though I had been born anew into a world where, freed from all influence save that of solitude, man begins to think. It showed me the distance which separates man as he should be from the degenerate creatures of the cities, and I felt myself returning to beauty. All was joy for me in translating the book into French. There was not a word, not a line of it, that did not make me vibrate. There have been, since men began to write, four, five, perhaps six noble books which may stand as monuments to our race. I do not hesitate to say it, "The Jungle Book" is one of them. It is an admirable guide, an admirable lesson, an admirable but awe-inspiring standard of comparison.

Having received this overpowering impression—though it was not my intention to continue to follow the business of a translator—I desired to become familiar with the other works of Mr. Kipling. I learned that it was not "The Jungle Book" which had established his reputation, but that he was universally celebrated on account of his barrack-room ballads, his tales of soldiers, and an infinity of other stories where life manifested itself with a fulness of energy of which no writer before him gave evidence.

THE POET-LAUREATE OF ACTION

And so it was that I read "Plain Tales from the Hills," "Many Inventions," "Life's Handicap," "Soldiers Three," and I became acquainted with a Rudyard Kipling very different from that of "The Jungle Book." But the new Kipling was every whit as powerful, and continued to fill me with wonder. It was a world, the world entire, which passed before my eyes—the life of the earth in its striving, the tremendous working force which is spread over the whole face of this planet. Men, animals, and machines, all were in action, and the prodigious poet had divined and laid bare the soul of it all, divined the soul so well that later, in a story called "They," he became to his own (apparent) affright a creator. Rudyard Kipling is the singer who celebrated the railroads, the steamships, the telegraph, the telephone, the electric light—above all, and beyond them all, the astonishing impetus which the conquest of the world by the white man has given to human activity.

Does this signify that on this account Rudyard Kipling ceased to be the poet of Nature and that he has cause to envy the poets of bygone days? If one is tempted to think so let him recall "The Spring Running," that tale which concludes "The Second Jungle Book," when the desire for love awakens in the depths of Mowgli's heart. What poets have written stories more abounding in poetry than the "Finest Story in the World," "Love o' Women," "The Brushwood Boy," "Without Benefit of Clergy," "They"? But Rudyard Kipling is overflowing with poetry; he is the first poet to whose inspiration the most inert matter has appeared in animated form. Everything talks, everything becomes personified. Recall "The Story of the Gadsbys," the scene called "The Garden of Eden." There comes a moment when the eagle that is soaring through space above the young pair speaks, when the line of snow at the horizon far away upon the Himalayas makes its voice heard and become a character, enters into the concert. According to Mr. Kipling, there is nothing which is not a concert for him who has ears to hear it—and well he knows how to hear it. For him the rivets of a ship chant their plaintive song; for him the locomotives hold council and take part in judgment upon the engineers.

From his entire work flows a poetry wide as the world which the poet has traversed, and which he seems to have at his finger-tips. The other day I translated a little story of six pages called "The Limitations of Pambé Serang." There, Mr. Kipling brings before you two sailors—an Asiatic, subtle, vengeful, inaccessible to any feeling of goodness, and an African with a child's heart, loving, forgetful of wrong. Is it simply the story of two sailors, one of whom kills the other out of spite and for a slight offense? Is it not rather the history of two countries? These six pages, where power of observation attains a prodigious height, will suffice to show that the author has not only traversed the earth and everywhere laid hold upon the spirit of it, but that he has given us to-day an insight into this spirit with the power of a master.

KIPLING'S MEN IMMORTAL

Mr. Kipling has been reproached for not having the art of creating personages. It has been declared that the characters of his stories do not remain in the memory. Strange reproach, seeing that never have there been characters so vivid as his; and if they do not remain in the memory it is because they are as numerous as the inhabitants of the world and memory is not vast enough to retain them all. In any event, Mowgli, I hope, lives in the memory of all; and he who created him has come very close to God. And Bagheera and Akela and Baloo and Kaa and Hathi and Shere Khan and Ikki the porcupine, and even down to the Bandar Log—do not these remain in the memory? And Kim and the Lama, once you have made acquaintance with them, do they not march eternally, in the memory, along the Great Road of India? And Ortheris, Learoyd, and Mulvaney, are they not known throughout the universe even as Aramis, Porthos, and d'Artagnan? Must we draw out the list? It would be interminable. How they persist in the memory, the people of Rudyard Kipling! I do not

wonder that it may be difficult to remember their names, since they are the world, all the vast world—and I ask, has any artist created characters more vivid?

KIPLING'S RECEPTION IN FRANCE

The task of translation was a foolish one and I took it up almost against my will. "The Jungle Book" has had a relative success in France. The *Revue de Paris* published the greater part of the translations of the stories in it, and M. Jules Lemaitre wrote in the *Echo de Paris* an unsolicited article in which he showed the enthusiasm and the surprise which the reading of these stories had brought to him. However, it was difficult to find a publisher and we saw the gates of the principal houses closed against us. It was the *Mercure de France* which opened its doors to us and we gave in six months "The Jungle Book" and "The Second Jungle Book." Then, but treading the most dangerous ground possible for one who knows France, and making a very cautious arrangement, we gave "The Finest Story in the World," "Love o' Women," "The Man Who Would Be King," "The Man Who Was," and "The Drums of the Fore and Aft," accompanied by short stories, judiciously and fearfully chosen, from the "Plain Tales from the Hills" and some of the other writings. I gave up all other work, applied myself to the task, and bit by bit gave several other volumes of stories selected from almost everywhere in his entire work. Then came "Kim," that poem of the mountain; "Captains Courageous," that poem of the sea; and it was but the other day that, with the devoted aid of an Englishman—Mr. Arthur Austin Jackson, nephew of Sir Alfred Austin, the poet laureate—I gave to my countrymen "The Return of Imray," ".007," "The Ship that Found Herself," "Dray Wara Yow Doo," "The Phantom Rickshaw," "The Head of the District," and "They." The greatest prudence, in fact, had to be exercised. I knew that the genius of Mr. Kipling would not impress itself all at once upon my countrymen, but I felt that they had need to have infused into them this vigorous elixir of regeneration. It seemed to me that I was doing a good deed in causing them to read the work of Mr. Rudyard Kipling. It is true that the French still show much oppostion to it, but I hope that I have conquered the open mind of the youth of the land, for success is apparent. Have there not been printed in the course of the year 1907 nineteen editions of the different volumes of translation which I have published in the *Mercure de France?*

Certain English critics have treated as a reactionary this admirer of the soldier, of war, of property rights, of human energy. They have pretended that his influence would serve only to retard the march of the world. For me his work could never be reactionary nor could it retard the march of the world—a work which approximates so closely the cinematograph and diffuses so widely an acquaintance with mankind, which brings together so many conflicting circumstances, so many types, so many diverse nations! But it all has the hall-mark of good sense. Ah, I know well what the "intellectuals" carp at! It is because Mr. Kipling lends himself neither to paradox nor to utopianism; it is because he carries no stock of sweetmeats into the prisons; it is because he finds that man was created for action and struggle rather than for enjoyment and laziness.

For my part, I possess my soul in patience and slowly accumulate translations and volumes of stories; and it has happened to me to receive letters, which give me a great deal of satisfaction and furnish me with proof that I am not deceiving myself. Here, for instance, is one, from one of our most distinguished and versatile men, which he sent to me after receiving my last volume of translations:

"You must know by experience that I very rarely return thanks for the books which are sent to me; but truly I have just tasted too much pleasure, thanks to you, not to shake off for a moment my rôle of silence. This cursed literary freebooter against whom all my teachings bristle up is, all the same, a very interesting and surprising rascal. A little more and he would be of the Chicago school of journalism. At the precise point where he is about to attain this distinction, with an inconceivable mastery he stops short, and there remains one of the most bewildering literary manifestations of modern times—perhaps the most bewildering of all.—ANDRE GIDÉ."

In this way I have been led to follow, step by step, the work of Rudyard Kipling. I have not plunged into it all at once; I have absorbed it slowly and my admiration has grown day by day. And it is only a little while ago that I came to make acquaintance with his verse—the beauty of "White Horses" and the charm of "Mandalay"—without hoping ever to be able to translate them.

THE HUMAN TOLL OF THE COAL-PIT

MORE AMERICAN MINE DISASTERS AND A FAR HIGHER DEATH-RATE THAN IN ANY OTHER COAL-PRODUCING COUNTRY—THE REMEDY

BY

EDGAR ALLEN FORBES

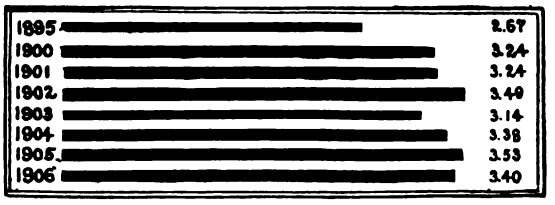
(WHO WENT TO THE WRECKED MINE AT MONONGAH, W. VA. IMMEDIATELY AFTER THE DISASTER IN WHICH 400 MEN WERE ENTOMBED, AND GATHERED HIS INFORMATION AT FIRST-HAND)

IN THE footsteps of every man that goes into the darkness of a coal mine, dodging this way and that in the shadows cast by the flickering lamp on the miner's cap, follows the spectre of Death. Yet to the miner it is all in the day's work.

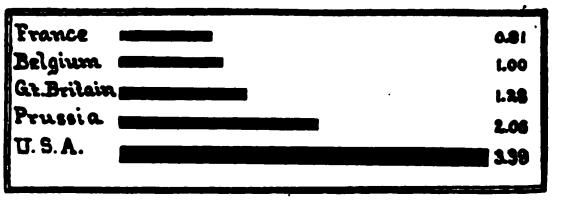
But though the man of the pit has grown to look on danger with contempt, it is not so with the woman on the mountain-side, the mother of his children. Throughout all the hills of coal the dark cloud of dread never lifts from her horizon, and it oppresses her sleep as a nightmare. Alongside the airy castles that her fancy builds for the future of her children, looms the orphan asylum. If a thunder-clap comes suddenly out of the sky, her first instinctive thought is of the mine. She is no nervous weakling, this miner's wife, but she daily bids her husband and sons good-bye with the same apprehension as have the women of the city whose husbands wear the uniform of fire-fighters.

If to the producing cost of a ton of coal were added its proportionate cost in human life and grief and misery, the selling price would restrict its use as an ordinary fuel. But grief and misery are not commercial terms, and life becomes a thing of concrete value only when coal operators feel the scarcity of labor, or when a jury's verdict convicts them of gross negligence. Not until grave economic conditions begin to imperil the store of coal reserves or to threaten a reduction of dividends, do legislators and stockholders seriously contemplate sweeping measures for reform. Thanks to a series of terrible disasters, that time has come. Early in December a representative of the Government, gathering data to show our need of a national Bureau of Mines, was at the Naomi Mine in Pennsylvaina, where about 35 men had lost their lives. He had not completed his report when a telegram called him to Monongah, in the Fairmont region of West Virginia, where a great hill had suddenly become the tomb of approximately 400 men. In the week that followed came a report from an Alabama mine that 60 men had been lost; and before all the bodies had been taken from Monongah an almost identical disaster in the Connellsville region of Pennsylvania took from a village practically all its bread-winners. To add to the horror and pity of the record, all of these disasters were probably preventable. A nation of organizers and systematizers, we have not yet systematized the industry of mining.

Yet mining is one of our great industries and coal-mining is the basis of much of our industrial wealth. We make the best mining machinery in the world and we send it to every region where men go down into the pit. We have, in the American Institute of Mining Engineers, one of the most distinguished scientific bodies in the world, and some of its members have won international fame as consulting engineers so far away as South Africa, Turkey, Australia, and South America. And yet——

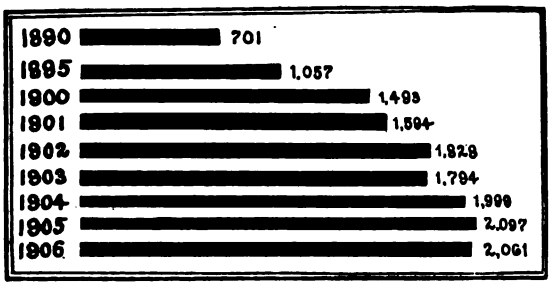


THE DEATH-RATE PER 1,000 MEN EMPLOYED IN THE COAL MINES OF THE UNITED STATES



DEATH-RATE PER 1,000 MEN EMPLOYED IN THE COAL-PRODUCING COUNTRIES—AVERAGES FOR FIVE YEARS

We are killing more men in the coal-mines of the United States now than ever before in our history—701 in 1890, 2,061 in 1906. True, we have more miners at work, but we are killing more out of every thousand employed than ever before—2.67 in 1895, 3.40 in 1906. The showing appears worse when contrasted with that of other coal-producing countries. Taking averages for periods of five years, we kill more than three times as many per thousand employed as are killed in France or Belgium, and nearly three times as many as in Great Britain. In Prussia, which has the worst record in Europe, the percentage is only two-thirds as large as ours. And we kill more per million tons of coal produced than we ever did before or than any other country kills now—4.97 in 1890, 5.57 in 1906. Yet the coal mines of the United States can be more easily worked and with less danger than those

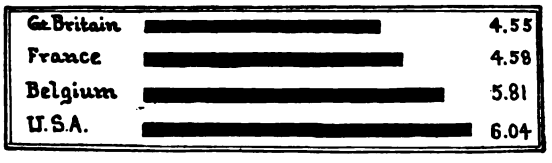


THE INCREASING FATALITY OF COAL-MINE ACCIDENTS IN THE UNITED STATES

The figures at the right show the number of men killed

of any other coal-producing country. Our mines are newer and less deep than European mines, and are less gaseous. Surely, in the light of these well-known facts, our record is inexcusably bad.

If the humiliation be not sufficient to arouse us to correct the evils that account for the record, here are some stern facts that must soon force us into action. With the exhaustion of our most accessible coal, both national and state governments will presently demand that there be less waste in mining. As our mines increase in depth, the business of mining will become increasingly difficult, dangerous, and expensive. The selling-price of coal will naturally advance with the cost of production. When the man who brings coal to our cellars begins to ask in the middle of summer the price that he now asks in the dead of winter, most of us will begin to take a personal interest in the problems of mining. But humane consider-



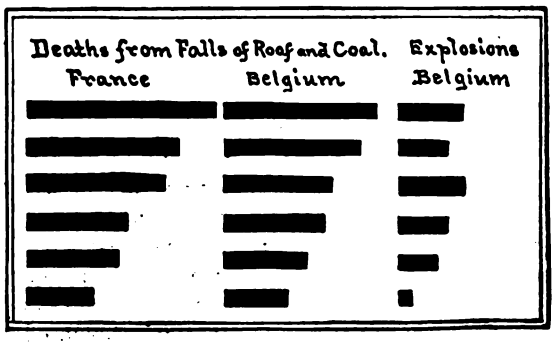
NUMBER OF MEN KILLED FOR EACH MILLION TONS OF COAL PRODUCED

Averages for five years

ations alone should lead to prompt preventive measures. Every mining disaster is a blot on our civilization. Look at this picture, sketched from life—and death.

A DESCRIPTION OF ONE MINE DISASTER

Between Fairmont and Clarksburg, in West Virginia, shut in by surrounding hills that rise almost vertically from the banks of a small river, is the little town of Monongah. It is wholly a mining village and there are nearly thirty others in the same region. On a Friday that has gone down in the mining history of this country, about 400 men and boys went jesting and laughing into two yawning caverns that open in the hillside half-way up from the river that separates the town from the mine. Down the slanting tunnel the lights of their caps flitted about in the darkness like fireflies, and then disappeared. Two or three hours later, with a sullen roar, the whole hill-country was shaken by a quake that rattled the windows in Fairmont, six miles away. For a moment, the heart of every woman in the little cabins on the hill stood still with a horrible fear. Then, dropping their work and catching up their babies, leaving the older children to follow as best they could, the women made a frantic rush for the two entrances, a mile and a half apart. At one, they found the superstrucure demolished and the passage choked with débris, at the other, the fan had been disabled—and fans are the lungs of a mine. From both tunnels



THE DECLINE IN THE DEATH-RATE IN THE COAL MINES OF FRANCE AND BELGIUM

poured a volume of smoke and dust and gas. But from this great cavern, with a floor area as large as two Kansas farms, came not a sound of life, not a smothered cry for help. Of the 400, only one came forth alive.

With the hundreds of shrieking, half-crazed women and wailing children about the mine came every man left in the town. They were not men that needed to be encouraged by feminine distress to do brave deeds; if heroism could have saved those inside, most of the victims would be living now. Frantically they cleared away the wreckage at the entrance and tried to force their way into the tunnel, but they began to drop in limp heaps and themselves had to be rescued. Then they settled down to the furious but systematic work of pushing the air ahead of them. In the necessity for this lies the explanation of the fact that it is often several days before the victims of a mine explosion can be reached.

Take as an example the entrance known at Monongah as No. 6. When the mine was first opened, a tunnel about eight feet wide and high had been driven slantingly into the mountain, along the seam of coal. When it had advanced about fifty feet, a similar tunnel was driven parallel to the first and distant about forty feet. When these two tunnels were connected in the hill, a circuit was made for the fresh air to enter and the foul air and gases to pass out. Then the tunnels were extended another fifty feet and connected at that point, the first connection being sealed up to favor the draft. This process continued until the tunnel had gone back into the hill for a distance of about a mile and a half. From this "main heading," smaller headings were cut at right angles so that the coal on either side might be taken out. These smaller headings lead into "rooms" or caverns made by the extraction of the coal. The same system of ventilation was required at every step in order that the current of air might reach the men at work in the rooms. To increase the draft, a powerful fan was placed at the entrance outside the mine.

The explosion filled the mine with an atmosphere of "black damp" in which no human being could live, blocked the main heading with wrecked cars and timbers that restricted the inrush of air, and demolished one of the fans. It also opened up all the passageways that had been sealed, and thereby prevented the draft of outside air from rushing straight through the mine. The rescuing party planned to work their way first through to the end of the main heading, bring out any men that might have fallen unconscious in the passageway, and extricate any that might be penned up in the rooms. This plan was carried out, but the rescuers could advance no faster than the air; it was necessary to stop at every opening and seal it up with canvas before the air would pass further inward—and they had to do this at a time when every moment of delay was perilous to any that might be yet alive and when their strongest men were dropping from inhalation of gases. Long before they reached the end of the tunnel, however, all hope of saving life had fled. From the room headings came no sound of imprisoned men. The rescue problem finally became a question of getting the bodies out, identifying as many as possible, and burying all decently.

"What does a mine explosion look like?" said a visitor as he came from the scene. "Like this: Think of hell as a hollow hill and imagine that its power-plant has exploded and blown a hole in the hillside. Then imagine a handful of reckless, begrimed men going into the cavern with lanterns, with sulphurous fumes in their faces, and dragging out the charred bodies of men, some with their faces burned off. That is what Monongah looked like."

The scenes in Monongah on Sunday were more harrowing than those of a battlefield. The first visitors from Fairmont saw a reproduction of the Inferno. It was not yet dawn in the town and the white clouds of steam from the power-house looked ghostly against the background of hills as they floated past the electric light. About the entrance waited a score of weary men, some of them exhausted, the lamps on their caps giving them the appearance of demons. Out of the pit, now and then, straggled men carrying safety lamps in their hands, the pallor of their faces showing through the coal dust that covered them; these were members of the exploring party that had come to revive themselves in the air. They came out dripping with perspiration and stood in an atmosphere that was uncomfortable even to men wearing overcoats. There was none of the tumult and the shouting. When dawn lit up the sky, it outlined the forms of shivering women high up on the hill-top, watching the mine entry.

Finally a horse came out of the hill and behind it a train of empty mine-cars; but the

last car was loaded and covered with stained canvas and blankets. The coverings were thrown off and one by one the blackened and mutilated bodies of what had once been men were carried to the waiting wagons, to be hauled over the bridge into the town and delivered to the undertakers. Only a few men saw the victims as they came from the mine. If identified, the families were notified; if not, the bodies were placed in rows in the bank building. In many cases the identification could be made only from the brass checks in the men's pockets, so terrible had been the force of the explosion. Seventy-five men digging graves on the hillside, a depot platform piled high with pine boxes, a row of coffins in the main street stacked three high and nearly a block in length, a corps of undertakers as large as a regiment's hospital corps, women whose eyes could weep no more, with orphaned children clinging to their skirts —these were some of the evidences that there would be no Christmas in Monongah for another year. And yet the Monongah mine was second to none in the state in its reputation as a safe and well-managed mine.

THE PREVENTION OF MINE ACCIDENTS

That the frequency of mine accidents can be reduced and the fatality brought down to a low percentage has been clearly shown in countries where, without neglecting methods of increasing the output, more consideration is shown for the lives of men. Fifty years ago the death-rate in the coal mines of Belgium was almost as large as ours is to-day; wise management, based upon scientific investigation, has reduced it two-thirds. One of the diagrams shows how steadily the fatality from falling roofs and explosions has been lowered in France and Belgium. In Great Britain, whose mining laws are becoming more and more rigorous, the result is shown in the following table:

DEATHS IN THE COAL MINES OF GREAT BRITAIN PER 1,000 MEN EMPLOYED

YEAR	EXPLOSIONS	FALLS OF ROOF AND COAL	ALL CAUSES
1851	1.87	1.90	5.47
1875	.68	1.07	2.68
1890	.57	.86	2.09
1895	.10	.75	1.63
1903	.02	.84	1.36
1906	...	...	1.29

Since coal-mining operations are essentially the same in all countries and the causes of accidents practically identical, it is reasonable to infer that methods which have pulled down the death-rate elsewhere would have the same happy result here. An examination of those methods shows how simple they are.

(1) Safety lamps in gaseous mines.—European countries have inflexible rules against the use of open lamps in mines where the presence of gas has been detected; at any moment the stroke of a pick might open a "pocket" of gas and the lamp would of course ignite it. But miners prefer the open lamps and will not use the others unless required to do so. The victims at Monongah were working with open lamps on their caps; it was two days after the explosion before a supply of safety lights sufficient even for the exploring parties reached the mine. By way of contrast, take the experience of Dr. J. A. Holmes when visiting a Belgian mine. Though accredited from this Government as a mine expert, he was required to make a complete change of clothing before entering the shaft. This was their way of making sure that no matches entered the mine.

(2) Limiting the amount of explosive.—Just about half of the deaths in the coal mines of all countries are due to falls of roof and coal. Some of the accidents spring from carelessness in supporting the roof, but the chief cause is the use of large charges of powder. These weaken the overhanging coal and earth, and even a small blast may at a later date precipitate an avalanche of débris on the workmen. The United States is the only coal-producing country that sets no limitations on the use of explosives. Other countries not only fix the amount allowed to each miner and the amount for each charge, but also limit the total amount allowed within a mine at one time.

(3) Forbidding dangerous explosives.—European mines have worked out the problem of adapting the kind of powder to the character of the mine. Some of them can use charges of safety powder weighing 700 grams in places where 30 grams of the other kind of powder always caused an explosion of dust or gas.

(4) The use of shot-firers.—In the gaseous mines of Great Britain, the explosives are not fired by the miners but by experts known as shot-firers. A similar practice is enforced in Iowa and Illinois. The shot-firer knows the proper amount that can be used without weakening the roof, and he also acts as a check upon the careless drilling of holes, thereby preventing imperfect shots that may ignite gas or coal-dust. Some explosions do occur under

this system, but the shot-firers are the only men in the mine.

(5) Sprinkling the coal-dust.—The dust from soft coal covers the tracks of the mine-cars, collects on every piece of timbering, and floats as a fine powder through the air. It is highly inflammable and explodes with terrific force. Many gas explosions would be comparatively trivial if the flame did not communicate itself to the coal-dust. But coal-dust can generally be kept down by sprinkling and keeping the air moist, just like any other kind of dust.

(6) Adequate ventilation.—This is secured in several ways in the European mines. Our engineers know how; the essential point is to see that it is secured and that the air passing through the mines is kept moist.

(7) Efficient inspection.—This is the weakest link in the chain. Assuming that the inspectors are faithful, the present state of mining knowledge forbids the assumption that they are competent. The Monongah mine was one of the "show" mines of the state; the Alabama mine was inspected just before the explosion, the inspector having just come out of the mine after complimenting the men on its condition.

(8) Emergency outfits.—The Europeans have devised appliances whereby a few men are enabled to enter a mine immediately after an explosion.

Perhaps the best solution to the problem of accidents will be the proposed National Bureau of Mines, which will become a great clearing-house of information. The results of its own investigations and of those carried on in Europe will be placed before every mine operator in the country, and much can also be done toward educating the individual miner. Dr. Holmes, who has already developed information of national importance as the result of his fuel investigations, proposes to build a miniature mine of steel, fill it at different times with various kinds of gas or with coal-dust, or with both in varying proportions, and make a test of the kinds of explosives now in use in this country to determine the quantity of each that can safely be used in the presence of dust or gas.

Unless something be done to safeguard the lives of the men in the mines, the native American miner will shortly disappear from the hills of coal. Even now he is only a minority in most of the soft-coal regions. With a steady stream of muscular aliens flowing into the country, the operators have not concerned themselves much about the natives, but as the mines go deeper and the call for intelligent labor becomes stronger, the American will be needed. I found in West Virginia an increasing reluctance to work in mines where foreigners were employed. The Americans will tell you that it is not a question of race or of union labor, but a question of safety; that mining is a business that calls for something more than brawn and muscle.

I understood what they meant when I stood at the entrance to the wrecked mine at Monongah and watched the men "on the job." They were exploring a thousand acres of cavern under circumstances that tested many of the finest qualities of manhood. To the physical strain was added the peril from falling roof, from suffocation by gas, from another explosion. Every step in the work called for discriminating judgment, for the future of the mine as well as their own safety was involved. And to the danger was added a task that tested their nerves still more: it was theirs to take out of the wreckage the mutilated bodies of their neighbors and friends—and this in an atmosphere above summer heat, filled with the odor of gas and decomposition. And they did it. When one of them dropped, he was carried into the current of air; if he revived, he resumed work; if not, he straggled back to the surface and rested until the next shift went in. The explosion had occurred on Friday morning, but when I left the mine on Sunday afternoon I saw men going in that had not been to their homes since the accident happened; some of them had not slept. A doctor stood by the entry and gave some of them tablets to stimulate their overworked hearts and lungs.

I watched the faces of the men and recognized the type. All of the young foremen in charge of the shifts and practically all of the volunteers were West Virginia mountain-folk. The mine manager had apparently excluded the aliens.

"What is the matter with the foreign miners?" I asked an intelligent young fellow resting in a coal-car.

"They can't stand it," he said. "They can handle a pick all right, but when something happens they lose their heads."

While we are giving thought to the preservation of our coal reserves, it might be wise for us to pay some attention to the reserves of American manhood in our coal mines.

ONE TON OF COAL TO DO THE WORK OF TWO

THE GOVERNMENT WAY OF LENGTHENING THE LIFE OF THE SUPPLY ON THE PUBLIC DOMAIN—LESSONS FOR EASTERN COAL FIELDS

BY

ARTHUR W. PAGE

THE problem of preserving the coal supply is important alike in the Eastern and in the Western States, but the National Government is more directly responsible in the West. For this reason its work there is the more instructive.

There are 215,000 square miles of coal land west of the Missouri River. Even from the car-windows, the lignite outcroppings are visible. Yet last winter the people suffered physically for lack of fuel. Coal costs $15 or $16, sometimes $20, a ton on the Pacific slope. Portland, Ore., is importing a supply from Australia, although there are coal deposits in both Oregon and Washington, and there is more coal in Montana than in any other state in the Union. The president of the American Mining Congress, who lives in Boise, Ida., has sent to Pennsylvania for his winter supply, in spite of the fact that there are millions of acres of coal in the adjoining states—Utah and Wyoming.

THE CAUSES OF THE COAL FAMINE

This unfortunate condition is due primarily to the coal-land law passed by Congress in 1874. It provided that any citizen could buy 160 acres of coal land from the Government for $20 an acre if it were within fifteen miles of a railroad, or for $10 an acre if it were farther away; but under no circumstances could any one buy more than 160 acres. That is too small an amount to mine profitably, and the law, if enforced, would have prevented the development of the coal business. In practice the law was disregarded, although it still remained upon the statute books. Under its provisions 400,000 acres have been patented, while 15,000,000 acres have been obtained by other means. Ignorance, laxity, and fraud account for this. The law has been effective in less than 3 per cent. of the land disposed of.

The railroads and their allied companies have become the greatest coal owners, as was natural. But their domination of the industry has added a fresh discouragement to the development of the coal resources. Coal that costs $1.50 at the mines sells for $3.50 or $4.00 in the towns. The freight rate is so large in proportion to the profit on the coal that a small reduction in it to one company would make an insurmountable discrimination against a rival. Such things have happened. A coal mine cannot afford to be on anything but friendly terms with its railroad, for unless there is a constant supply of cars the mine must shut down. It does not pay to rehandle coal. A lack of cars, or even a delay in their arrival, means a serious loss to the mines.

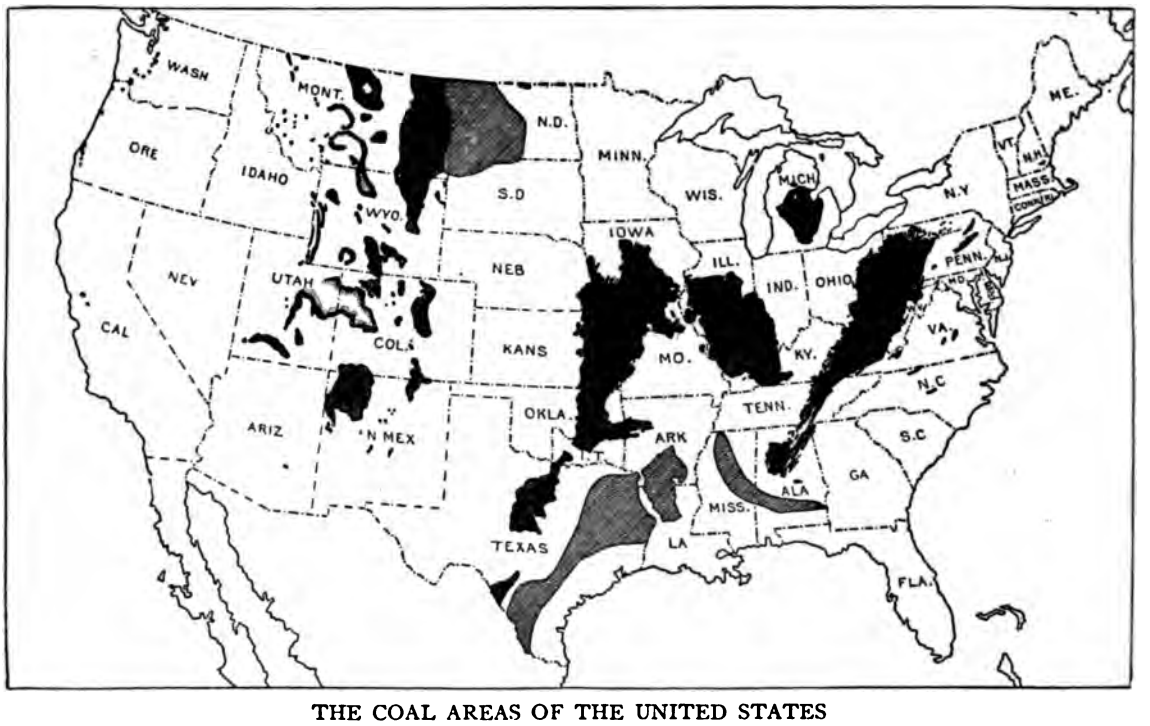
The present bad condition, therefore, grew up naturally under an unwise law which drove some men to illegal methods and invited all to use them, an opportunity that some willingly accepted. Thus the railroads have built up a quasi-monopoly which is unable to supply the demand, leaving the people of a coal-bearing country suffering for fuel.

THE REMEDIES

After the enforced resignation of Binger Hermann from Land Office and the subsequent exposures, the Government began to prosecute violations of the coal-land law. Three men were convicted at Sheridan, Wyo. The Union Pacific Coal Company returned to the Government a large tract that it had wrongly acquired in exchange for less valuable land in the National Forests. A suit for another tract was instituted but it also will probably be returned without contest. There are a great many indictments now pending.

But while the Department of Justice was catching land-grabbers here and there, the land-grabbing game was going merrily on.

At one time there were entries pending for 9,256,000 acres of what was supposed to be coal land. But the Land Office did not know accurately whether it was or not. The Government was giving away one of the great natural resources with its eyes shut. Then the President withdrew 71,300,000 acres of land from entry, until it could be examined and classified, and he announced the policy of his administration to be a system of leases for the coal mines still belonging to the Government. This was not a suddenly adopted plan. It was the result of the investigations and recommendations of the experts in the Geological Survey. The coal supply, it maintained, was more in need of conservation than any other of our natural resources; for, when it is exhausted, there can be no replenishment. The Survey estimates that there are about 2,200,000,000,000 short tons of coal left in the United States. Yet the present increasing rate of consumption will require all that in 200 years; some authorities say in 100. But before the supply is exhausted we shall be getting coal from low-grade deposits, from great depths, or from remote points. When that time comes we shall be in the throes of a continued coal famine, for the price will be prohibitive to many manufacturers and to the poor. Certain kinds of coal are even now becoming scarce. Good coking coal sells for as much as $2,000 an acre. Anthracite is used less for steaming and more for domestic consumption because of its high price. The Pennsylvania anthracite will probably not last more than seventy-five years longer.



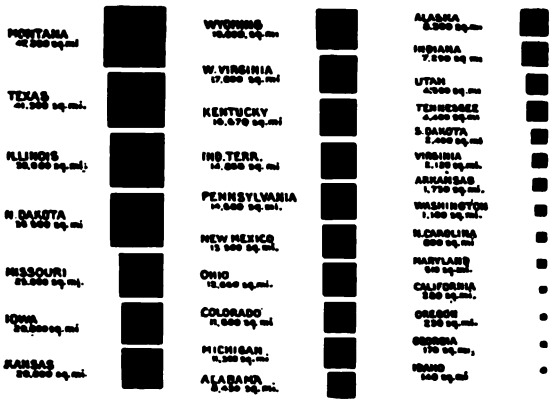
THE COAL AREAS OF THE UNITED STATES

The black areas are anthracite and bituminous; the shaded areas are lignite. Much of the low grade bituminous and the lignite now nearly valueless, will be good fuel under improved methods of use

COAL CONSERVATION

The Administration's plan does not mean the hoarding of the present supply for future use; it merely provides that it shall be so used that none of the coal is wasted in mining, and as much as possible of the power of the coal shall be developed in its use. It is hoped also that the plan will end the old system of fraud and corruption, and to some extent relieve the coal scarcity in the West. The President's recommendation in his latest message was as follows:

"In my judgment the Government should have the right to keep the fee of the coal . . . fields in its own possession and to lease the rights to develop them under proper regulations; or else, if the Congress will not adopt this method, the



THE COAL AREAS OF THE DIFFERENT STATES
Showing the large coal deposits in the West. Most of it is low grade

coal deposits should be sold under limitations, to conserve them as public utilities, the right to mine coal being separated from the title to the soil. The regulations should permit coal lands to be worked in sufficient quantity by the several corporations. The present limitations have been absurd, excessive, and serve no useful purpose, and often render it necessary that there should be either fraud or else abandonment of the work of getting out the coal."

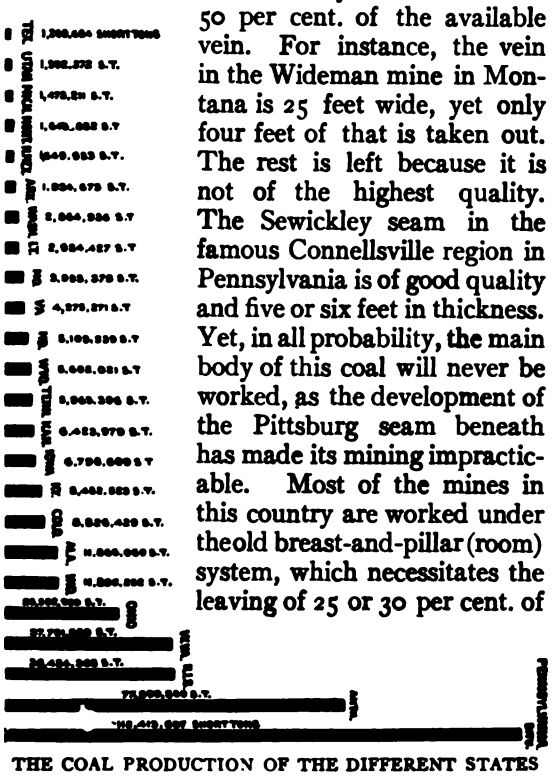
Under what is known as the leasing system, the Government would allow a company to mine the coal, under restrictions, for a payment of a certain royalty per ton. Senator La Folette has made a great point of the fact that the Government should retain the title to the land. The opponents of the measure have laid great stress on the same point: "The Government is going into the coal business," they say. But leasing a mine and charging, say, ten cents a ton royalty is little different from selling the coal at ten cents a ton, which does not differ radically, as far as governmental theory is concerned, from selling it at $10 an acre.

The plain facts are that the Government was outrageously cheated—or cheated itself—when it sold the coal land by the acre, and the Administration thinks that by selling the coal by the ton—as the Northern Pacific Railway does, for example—it can get more for the coal and maintain more respect for the law than hitherto.

LESSONS FROM GERMANY AND CANADA

This may mean more centralization of the governing power. Nevertheless, it seems advisable to profit from Germany's example, if possible. Private owners got control of the German coal-fields many years ago, and only lately has the Government begun to realize that the German people were not getting the full benefit of their fast-diminishing heritage. Their Government has now spent $71,000,000 in an effort to buy back their coal-fields. By an Order of Council of last March, Canada put the coal lands still belonging to it under the system which the Administration is advocating here.

This policy was not designed to stop land frauds nor primarily to increase the revenue (nor does our Government care about the revenue) but to save the coal; and that is also the most pressing need in the United States. The Government mines worked by private companies in Canada must conduct their operations under the government regulations. The result is that the mines are worked clean. In one which an expert from the Geological Survey visited, the company was taking out 98 per cent. of the coal. The miners worked backward from the end of the galleries toward the shaft, taking all the coal with them as they went. By this "long-wall" method the wastes which have occurred in our Eastern coal-fields would not be repeated in the West. And this waste is enormous. In many mines it reaches 50 per cent. of the available vein. For instance, the vein in the Wideman mine in Montana is 25 feet wide, yet only four feet of that is taken out. The rest is left because it is not of the highest quality. The Sewickley seam in the famous Connellsville region in Pennsylvania is of good quality and five or six feet in thickness. Yet, in all probability, the main body of this coal will never be worked, as the development of the Pittsburg seam beneath has made its mining impracticable. Most of the mines in this country are worked under the old breast-and-pillar (room) system, which necessitates the leaving of 25 or 30 per cent. of



THE COAL PRODUCTION OF THE DIFFERENT STATES
Showing the small production in the West and the large output from the Pennsylvania fields

the coal as roof-supports. When the mine is abandoned all this coal is lost. Saving this waste is equivalent to the discovery of new coal-fields. There is another waste which goes on at present, which would also be obviated. There are now about 30,000,000 acres of land that might profitably be used for agriculture, grazing, or forestry which are merely being held by the coal companies to maintain their title to the coal below. To separate the title to the surface from the title to the coal would release this land for settlement and use.

This is the plan of the Geological Survey to mitigate the present evils and provide a better supply of fuel for the future. There are two sources of opposition—one from the beneficiaries of the old system of graft and the other from an honest difference of opinion.

"All these regulations will retard the growth of the West," "It is paternalism, a government by bureaus," etc., etc. By whatever name it is called, it is certainly a change—which is always objectionable to some people—toward a sensible recognition of the conditions under which we live. The Administration's plan, although probably not perfect, is the only active plan for doing this.

THE USE OF GAS-PRODUCERS

Besides taking all the coal from the ground, there is another method of increasing the life of our coal-fields. As a rule only about 5 per cent. of the heat of the coal which reaches our furnaces is transformed into available power. The rest is lost in smoke, gases, friction, etc. If a locomotive transformed all the energy of the coal into driving power, the railroads of the United States would need only 5,000,000 tons of coal a year instead of 100,000,000 tons. The most efficient engines at present convert about 10 per cent of the coal's energy into available power. Every improvement in boiler or engine is the same as the discovery of more coal. On this problem, too, the Geological Survey is engaged. At St. Louis, and later at Norfolk, it exhibited a contrivance which looks much like a huge old-fashioned, round stove, without a chimney. It is a gas producer, an invention which has been known for some time and which to some extent is already in use abroad. Its introduction into this country means that the 30,000,000 or 40,000,000 acres of lignite in the West, which have hitherto been of little value, can now be used as efficiently as the good Eastern steaming coal. It will also save for commercial use the millions of tons of low-grade bituminous coal which is now thrown away on the dumps. To make the hot fire necessary for steaming, coal must have a high percentage of fixed carbon and a small percentage of moisture, ash, and volatile matter. The large percentage of fixed carbon in anthracite and good bituminous coal is unnecessary in the gas-producer. It is a circular, air-tight furnace in which the coal is partially burned, thereby producing gas, which is supplied to a combustion engine which transforms its energy into available power. To get power from coal by this method needs no boiler, nor steam-engine. There is no smoke and the ashes are the only waste. During the tests at St Louis, a plant of this kind got more power out of North Dakota lignite than the steam plant could get from the best West Virginia coal. This prosaic-looking machine gives new possibilities to the development of the Rocky Mountain States. Most of the lignite outcroppings now lie undeveloped. Some of them are even on fire, as the one at Newcastle, Colo., which has been burning for five years. But when the gas producers come into use these outcroppings will support manufacturing towns and cities, like the Eastern manufactories but without smoke and dirt. There will be fewer trains carrying coal for their own locomotives. Some of the thousands of cars that are now used for that purpose will be doing other service The energy of the lignite will be changed to electricity at the mines and distributed by wires which will carry the power of hundreds of carloads of coal.

A SAVING BY BRIQUETS

Besides the use of the gas-producer, the investigations of the Survey have demonstrated another method of using coal which has been going to waste. Much of the slack non-coking coals can be made into briquets and thereby given the value of the best lump coal. There are now briqueting plants in San Francisco, Kansas City, and Brooklyn, and a fourth in Western Pennsylvania. The investigations have proved also that many coals which had been considered as non-coking can be made into commercial coke, and that some low-grade bituminous coals and lignites can be used for the manufacture of valuable byproducts. The Survey has also analyzed and tested many coals. I happened to be with one of the experts in Medford, Ore., when he heard of a new vein

there. He immediately went to it, and with a pick began to chip off a sample in the end of one gallery. This was chipped equally from all across the face of the vein. When we got it outside in a linen duster, we crushed it thoroughly, mixed it, and divided it into quarters, one of which was dumped into a sealed can to be sent to Washington. There its analysis can be seen along with those of many other coals. From them the mine owners and the consumers can find out of what their coal consists and how it can be used most advantageously.

That all this work may be carried on more extensively and that some method may be devised for stopping the awful disasters in the coal mines—and for other reasons—the American Mining Congress has asked that a Bureau of Mines be created in the Interior Department, and the President has recommended this to Congress. If the recommendations are carried into effect, the new bureau will be the technicological branch of the Geological Survey, endowed with funds and power to—

(1) Manage the 30,000,000 acres of coal land still belonging to the United States so that they will yield the greatest amount of coal now and in the future.

(2) Continue its experiments to find new methods of using the coal more efficiently.

The success or failure of a Bureau of Mines in dealing with the coal problem would greatly affect our commercial progress, for our permanent prosperity will have to depend on economically managed fuel.

The men in Washington who are working for the better use of our natural resources—the land, the forests, the water courses, and the minerals—have the support of a large part of the American people of all professions and ranks in life. A great practical economist like Mr. James J. Hill is found quoting the late Professor Shaler, a great teacher, to prove that the nation's resources must be preserved.

A FEW GOOD BOOKS

THE great Cambridge Modern History, which was the dream and remains the legacy of Lord Acton, goes steadily toward its completion. Volume 10, covering the period from 1815 to 1840, draws nearer us in time. As the editors say in their preface, they have found the task increasingly difficult as they approach the present day, but the volume in hand gives no indication of failure of method or of skill. It is one of those strong, substantial, durable books which, like the "Dictionary of National Biography," has given character and distinction to the British publishing of our time. This volume is the joint work of nineteen scholars and covers the field of the modern world, giving, what is rare in history, an adequate treatment of the literary achievements in England of the period which it treats. Such a work is of great interest and suggests that perhaps for the future even more of our histories will be written by the method of coöperation. Much as many of us might have liked to see at least one complete volume from the pen of Lord Acton himself, it is a question whether even so great a scholar as he could have gathered into his hands the enormous and varied material covered by such a volume as this. (The Macmillan Co., $4.)

THE classification of Washington's life, indicated in the title of Mr. Owen Wister's "The Seven Ages of Washington," is as satisfactory as any artificial classification can ever be, and the general review of the man shows a very human and natural character, which is fortunately beginning to emerge from the haze of tradition with which stilted and hero-worshiping biographers have for years befogged our vision. A great deal of careful reading and that sympathetic imagination which Mr. Wister's readers expect in his work, have gone into the preparation of this book. (The Macmillan Co., $2.)

AT THE head of the list of recent books on Latin-America stands Mr. Percy F. Martin's "Mexico of the Twentieth Century," an admirable piece of literary work. In his two volumes will be found practically all that most men need to know of a country about which such a vast amount of misinformation has been circulated since North mines and plantations were first exploited. The author came to

his subject after having written an excellent book on South America. He has a pleasing way of pausing now and then, when he reaches an interesting subject or personality, to write as entertainingly as if it were a magazine article. Mr. Martin, who is an Englishman, concedes that we Americans have played the commercial game fairly and adds that "the history of the Americans in Mexico is a history of which any alien country might feel proud." He says:

"The clean-cut, trim-built, stern-faced young American is a familiar sight nowadays in all parts of the world. I have met him in Japan, in Australia in South and Central America, in the British, German, and Dutch Colonies, and occupying positions of responsibility and trust in his own new over-seas possessions. Always one notices the same inflexible purpose, the noble earnestness, the indomitable will to succeed." (Dodd, Mead & Co., 2 vols., $8.50.)

IT has been a long while since a good English book on Brazil was published. In "The New Brazil," Mrs. Marie Robinson Wright has given us an unusually attractive volume, with illustrations on most of its 450 quarto pages. In the course of two years' constant travel within the limits of a single country, an observing writer can accumulate a vast amount of helpful information. It is an occasion of regret that such an acceptable book should have been written with superlatives. Her description of the Cabinet members, for example, makes one feel that it is a pity that some of the other South American countries do not import some of the illustrious statesmen of Brazil. But, while the book cannot be classed with Mr. Martin's "Mexico," it is not too much to say of this that it has all the facts about Brazil that one needs to know. And its wealth of illustration atones for any defects that may be observed. (George Barrie & Son, Philadelphia.)

THAT "tribute, respect" which Wordsworth so eloquently demanded in his sonnet on "The Extinction of the Venetian Republic" continues to be paid, though a century has passed. Both the beauty and the historic unity of the city are brought out in Pompeo Molmenti's "Venice," which has been translated by Horatio F. Brown. The middle division of the work, the two volumes on "The Golden Age," is now ready—covering the period of splendor from the middle of the fifteenth to the middle of the sixteenth century. It affords a surprisingly full account of the life and customs, manners, clothes, amusements, education, and business of the Venetians, and is so admirably illustrated with nearly one hundred full-page pictures as to bring not merely the places but the details of scene and costume vividly to the reader's mind. Lovers of Venice will find the books a storehouse of information and delight. (A. C. McClurg & Co., $5.00.)

A NOBLE book which fitly commemorates a noble career is "Augustus Saint-Gaudens," by Mr. Royal Cortissoz. There is something dignified and rare in the externals of the volume. Its severely simple binding, its tall quarto pages, its strikingly clear type, its air of space and distinction, form a worthy setting for the contents.

The record of Saint-Gaudens's work, in twenty-five exquisite photogravure reproductions of his bronzes and marbles, and the survey of his life, both alike keep the high plane of the whole book. Well written, full of dignity, just discrimination, and measured praise—an appropriate memorial of the career of our greatest sculptor; and by the soundness of its judgments it joins to the note of requiem the rarer note of clear-eyed criticism. (Houghton, Mifflin & Co., $7.50.)

THE novel "A Prophet in Babylon," by W. J. Dawson, is meant to point a moral; and reverently and most effectively it does point a moral; and the moral is that the churches have become professional, that men must employ other means — more earnest means — to lift up society and to stop "the manufacture of crime and poverty." Whether in spite of its message or by reason of it, it is an interesting story; and the earnest thought of it holds you — if you think at all on such subjects. (Fleming H. Revell & Co., $1.50.)

A BOOK of poems of nature, "Lyrics from Cotton Land" comes from the pen of John Charles McNeill, who died not long ago in Lumberton, N. C. The nature of which Mr. McNeill wrote was the nature which existed around him and which he knew with homely accuracy after the manner of Burns. He appreciated, too, the humor and pathos of the Negro. The humorous side of the darkey is also shown in the inimitable illustrations of Mr. Kemble in the book of lyrics. (Stone & Barringer, Charlotte, N. C.)

The World's Work

WALTER H. PAGE, EDITOR

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FULL-PAGE PORTRAIT OF MR. TAFT AND MR. HUGHES *Frontispiece*

THE MARCH OF EVENTS—AN EDITORIAL INTERPRETATION - - - 9941

(With full-page portraits of the late Edward A. MacDowell, the late Edmund Clarence Stedman, Manuel II., of Portugal, and Judge Elbert H. Gary.)

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THE WORLD'S WORK

MARCH, 1908

VOLUME XV NUMBER 5

The March of Events

THE national Employers' Liability Act, which President Roosevelt had recommended with much earnestness, was lately declared unconstitutional by the Supreme Court because its operation was not clearly restricted to employers who have interstate activities. The President had a natural occasion, therefore, to send a Message to Congress — in fact, it is his right and privilege to send a Message at any time, and his duty when he thinks that occasion demands it — urging the passage of an Employers' Liability Act that should avoid this technical error. And then the flood came!

In a word, this occasion arose at a time when Mr. Roosevelt had much to say incidentally to Congress, but primarily to the country. To Congress he recommended not only another Employers' Liability Act, but an Act to confer enlarged powers on the Interstate Commerce Commission to pass upon rates on its own initiative, to make a physical valuation of any interstate road, to have control over stock and bond issues, and to have a certain degree of control over the physical operation of roads; and other measures as well.

But these specific recommendations to Congress were almost forgotten because of the vehement defense and restatement and elaboration of the Administration's policies which made up the greater part of the Message.

The substance of the Message was not new. Mr. Roosevelt had said all these things before. Why, therefore, did it cause so profound a sensation? No other Message of recent times provoked such discussion, not even Mr. Cleveland's Venezuelan Message. The anti-Roosevelt press declared that the President had lost his mind; papers of the timider sort thought such a philippic against predatory wealth "unfortunate at this time"; journals which speak for large business interests regarded it as at least "uncalled for" or "unnecessary"; Mr. Bryan hailed it with delight, and he had the humor to say that he stood for the conservative thought of the country which must be saved from the President's radicalism; the rag-tag type of politicians declared that it was a "shrewd move" to stampede the Republican convention for a third term; and so on and so on. Now, why all this?

For the President is right and he only hews to his old line, but he hews hard. The vehement personalities of the Message were mistakes of judgment or surely of taste, for the President need not descend to controversy. But the main matter of it all is the call of a leader — a crusader, if you will — to the conscience of the people for a high moral standard in corporate management. Read this:

"The opponents of the measures we champion . . . speak as if the movement in which we are engaged was purely economic. It has a large economic side, but it is fundamentally an ethical movement. It is not a movement to be completed in one year, or two or three years; it is a movement which must be persevered in until the spirit which lies behind it sinks deep into the heart and the conscience of the whole people. It is always important to choose the right means to achieve our purposes, but it is even more important to keep this purpose clearly before us; and this purpose is to secure national honesty in business and

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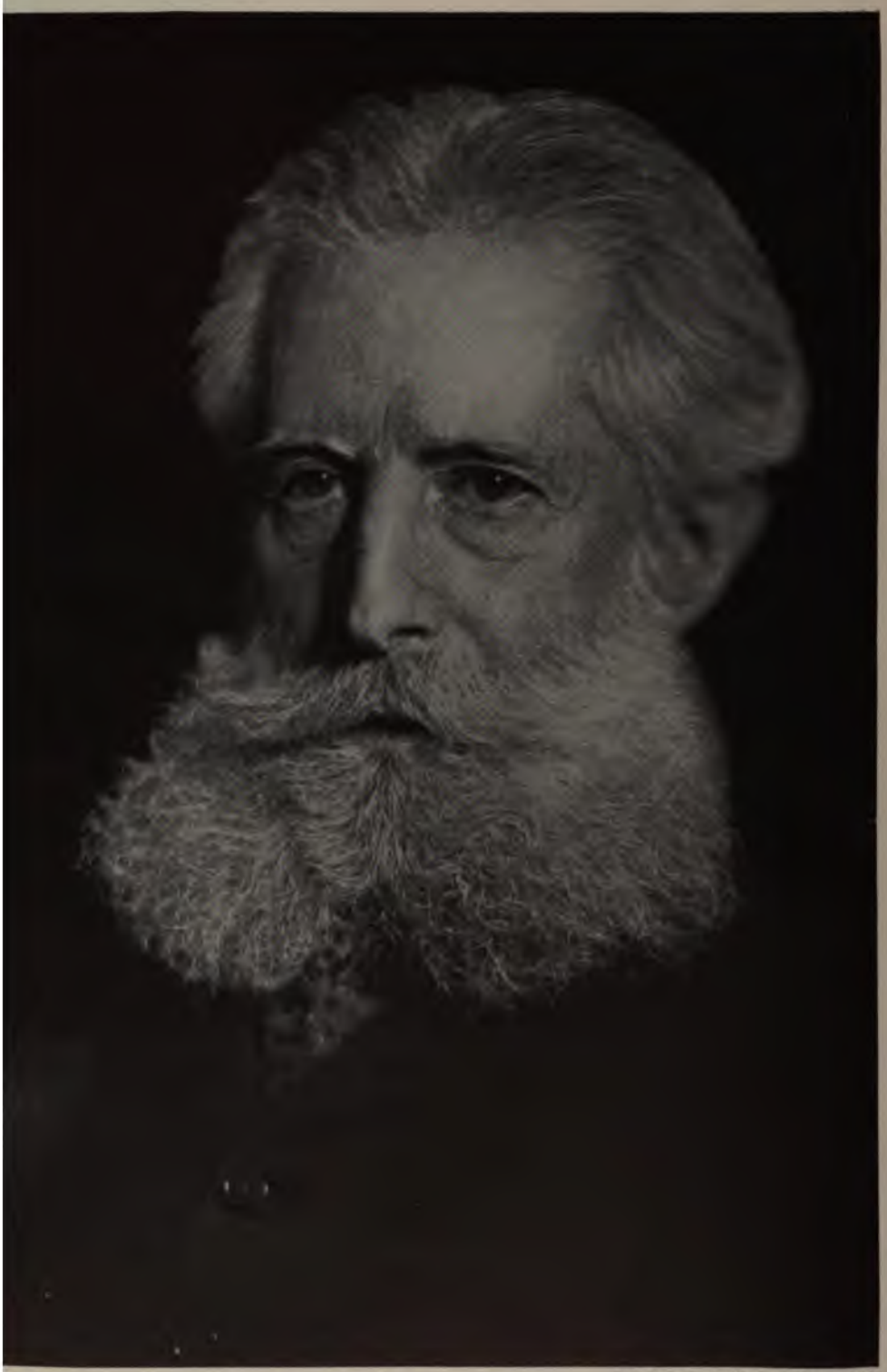

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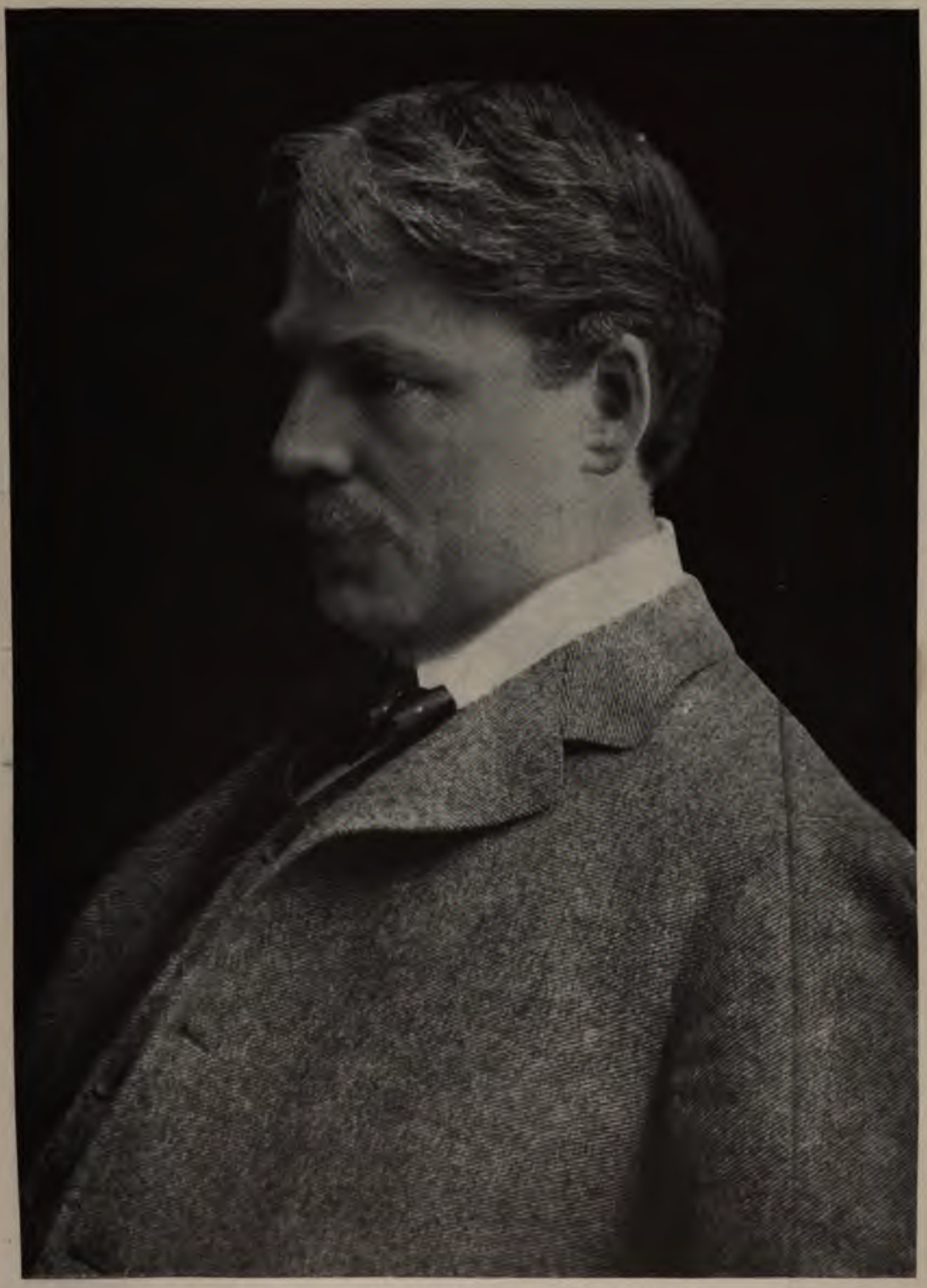
THE LATE EDMUND CLARENCE STEDMAN

POET AND BANKER AND EDITOR OF THE GREAT COLLECTIONS OF VERSE CONTAINED IN THE VICTORIAN AND AMERICAN ANTHOLOGIES



THE LATE EDWARD ALEXANDER MACDOWELL

THE GREATEST MUSICAL COMPOSER THAT AMERICA HAS PRODUCED

in politics. We do not subscribe to the cynical belief that dishonesty and unfair dealing are essential to business success, and are to be condoned when the success is moderate and applauded when the success is great. We are trying to secure equality of opportunity for all, and the struggle for honesty is the same whether it is made on behalf of one set of men or of another."

President Eliot, of Harvard University, declared the other day that Mr. Roosevelt would live in our history as one of "the Great Presidents"; and this "ethical movement" will be associated with his name — long after his mistakes of method and perhaps of tone have been forgotten.

The reason for the sensation that the Message caused was that it came at a time when business men were timid in talking about business and when the politicians were thinking of their game in a Presidential year. But the President was thinking not of this year's political cause nor of immediate problems of business, but of a large "movement."

WHY THE PRESIDENT IS RIGHT

WHEN Mr. Roosevelt entered the White House the general feeling of the mass of the people was that what he has called "predatory wealth" was above and beyond the law. Great corporations could make their own laws, or evade them. Many thoughtful men were hopeless. Sometime, somehow, the unlawful privileges and practices of the great corporations and of the great money-kings and of the great "magnates" must be checked; but how could it be done? Legislatures and Congress seemed to be their servants, and the power of colossal aggregations of wealth in unfair commercial privilege and in government and in politics was constantly growing. Our masters were becoming cynical, and the people were becoming hopeless — were ready, under vigorous bad leadership, at any time to become reckless. There were many thoughtful, quiet men who feared a war of classes, a sort of violent social strife, perhaps an open and confiscatory attack on all wealth. And nobody saw a clear way out.

Mr. Roosevelt, as President, has had the courage to show a way out. The people are no longer hopeless about enforcing the law against the rich when the rich are criminal.

If his mistakes of tone or temperament or of controversy had been ten times or a hundred times as many as they have been, this one large item of achievement would cause them all soon to be forgotten.

If there be readers of this paragraph who dissent from this judgment, let them do two things: (1) read the criticisms that were made of Jefferson, which in bitterness were a hundredfold severer than any criticisms now made of Mr. Roosevelt, and recall Jefferson's vehement errors (he persuaded himself that even Washington was a "monarchist") which were soon forgotten in the greatness of his fame; and (2) read this judgment ten years from to-day and see if it have not by that time become the general judgment of the nation. In fact, it is the general judgment now; for all available evidence shows that Mr. Roosevelt's great popularity continues among the masses and grows, because they feel that he has been their successful champion against Entrenched Privilege.

HUGHES AS A PRESIDENTIAL POSSIBILITY

THERE was nothing startling in Governor Hughes's formal declaration of faith as a candidate for the Republican Presidential nomination — there was no bugle-call in his speech. It was a temperate, orderly, well-reasoned, and somewhat cold explanation of his position on subjects of present controversy. He approves the regulation of interstate transportation, the rate Act, the punishment of individuals for corporation law-breaking and not merely the fining of corporations—which only takes money from stockholders—the "clarification" of the anti-trust act, an employers' liability law which shall embody all of the principle but avoid the technical error of the Act recently declared unconstitutional, and a revision of the tariff so that it shall still embody the protective principle.

The only important difference between the position of Governor Hughes on these subjects and the position of President Roosevelt is the very important difference of temperament and method. Governor Hughes would, perhaps, not go so far as to have the Interstate Commission take "physical" supervision of railroads, in any respect, and perhaps he would not favor using the postal laws in an effort to prevent gambling in stocks. But these are subjects that he has not had to attack at close range, and he has gone far toward the same end in the use that he has made and would make of the state government of New

MANUEL II., KING OF PORTUGAL

WHO, AS SUCCESSOR TO THE LATE CARLOS I., IS TAKING STEPS TO RESTORE PEACE AND PROSPERITY TO A BACKWARD AND DISSATISFIED COUNTRY

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JUDGE ELBERT H. GARY

HEAD OF THE UNITED STATES STEEL CORPORATION, AMERICA'S LARGEST "TRUST," WHOSE POLICY OF STEADYING THE TRADE BY REFUSING TO CUT PRICES IN A TIME OF DEPRESSION IS NOW BEING TESTED

York. The Public Utilities Commissioners of his own creation have almost unlimited powers of supervision and regulation.

The greatest difference — by fair inference from Governor Hughes's speech — between the President and him lies in the emphasis that one puts on state government and the emphasis that the other puts on Federal activity; and no doubt much of this difference is academic — at least temperamental. Mr. Hughes, as President, would never use the office as a great sounding-board for a sermon on an "ethical movement." Nor would he ever bring an ethical movement about. He would be a President of dignity, of courage, of right and high-mindedness, and of what the timid and the lovers of precedent call "safety."

But (remembering that political prophecy is ever dangerous) there seems now small likelihood of Governor Hughes's nomination this year. The people of the whole country do not know him. He has yet had only a brief career in politics and in administration. Nor has he any great aptitude for making himself known to the masses. He is too reserved, somewhat too formal, much too "legal-minded" to win in a short campaign. If the field were clear and there were a scarcity of better-known candidates, his chance would be greater. If he should win, he would make an excellent, non-aggressive President; and, if he lose, he will have lost with dignity and have won the respect of the party and of the country by his wholly proper attitude in the contest.

What ought to happen for the well-being of New York is his reëlection as Governor. His administration already marks a new era in the recent political history of the state.

A CHEERFUL FULL-TILT TO DEFEAT

SECRETARY TAFT, if the tide runs for the next three months as it has run for the last three, seems almost sure to be the Republican nominee; and, if he be nominated, not even a continuation of bad business conditions nor perhaps even bad crops can work his defeat. For, next to the President and Mr. Bryan, he has the largest and most enthusiastic personal following of all our public men; he has the respect of all parties and factions; of all the Republican candidates he has been longest in the field; he has had the most varied and successful training for the Presidency of all men in our recent history, and he stands for the larger policies of this Administration without having provoked a legion of personal animosities.

The Democratic nomination still seems likely to go to Mr. Bryan; for against his great and devoted and vociferous personal following and the abjectness of the Democrats who are not his followers, there are no very active forces at work. And he *is* active. In his whole remarkable and energetic career he was never more eager or hopeful or fuller of the spirit of good will or more cheerfully effective and audacious as a personal campaigner.

A concerted and well-generaled campaign for Governor Johnson, of Minnesota, begun six months ago and managed, let us say, with the practical ability with which Mr. Hanna managed the campaign for McKinley's first nomination, might have won the nomination for this modester, safer, quieter man and more orthodox Democrat than Mr. Bryan is. But Governor Johnson has not been self-assertive, nor have his friends made any vigorous effort to checkmate Mr. Bryan.

THE SWING TOWARD RIGHTEOUSNESS

THIS nation stands to-day upon the threshold of a new era. The decade just closed was an era of Big Things, regardless of character. It was also an era of Big Men, sometimes regardless of character. The marvelous rebound from the depression that ended in 1897 brought with it a spirit of conquest, of commercial aggression, of pushing forth new lines of action. In the heat of victorious battle, we came to forget the amenities of business life; we came at times to forget even the decencies of business life. We aimed at mighty ends; and we won them, though the winning might be at the expense of cleanliness and honesty.

I

The trail of immorality is plainly visible through the record of the years we have left behind. Grossly and roughly we traced it through the wonderful piling up of insurance wealth. To-day, the face of the honest banker is flushed with shame as he contemplates the methods to which the baser members of his profession descended. The revelations of terrible corruption in municipal and state government in California, Missouri, Pennsylvania, and half a dozen other states have shocked

the world. Financial piracy in railroad administration and reorganization have been uncovered. At first glance, the most bitter of the foreign estimates of American honesty and cleanliness seem justified.

But to-day it may be written, once and for all, that the commercial structure of America must be builded in honesty and founded in integrity, or it will fall. It mattered not how splendid to the eye was the palace built by Insurance Corruption. When the gale beat upon it, it collapsed. The trenches and the fastnesses of corruption have been stormed in every state by the conscience of an awakened people.

II

It is time to contemplate the swing toward a better code of business morals. In the closed decade we have done much. We have created mighty trusts; we have grouped together giant railroads; we have reared an insurance structure that pierces the clouds; we have founded a foreign trade that begins to startle the world; our banks have grown to be Titans; at Panama we have undertaken a task that baffled France, with all its wonderful patience and resource; our magnates have grown to a size unparalleled in the history of the world's finance; the shrewdest of our people have gained money that makes of them in the capitals of Europe fables and allegories for ponderous wealth.

Yet, at the beginning of the year 1908, one may write plainly the new spirit of the people of this country. That spirit demands, and will demand with louder voice as years pass by, that Corruption cease and Cleanliness take its place. Mere Bigness has ceased to be a god; it is recognized as a fetich. There is a feeling in the hearts of the people that the tyranny of Bigness must cease, and must give way to the gentler rule of humanity, honesty, straightforwardness, and liberty.

American commercialism has been indicted by the people of America, and a true bill has been found against it. The panic of 1907 was the verdict. Sentence has been suspended. The prisoner has been released, on his good behavior. There is no check, no let, no hindrance imposed upon the growth of American commerce, at home or abroad across the world. Only, it is stipulated that corruption, graft, dishonesty and criminal extravagance be driven from the Executive Chamber, from the City Hall, from the banking room, from the railroad board-room, from every focal point of commercial power and initiative.

III

It is the beginning of new things. Many strong men, grown used to the old régime, have come to regard the unclean methods of the dead era as essential to the successful prosecution of commercial conquest. They rave against the newer order of things. A few of them have already withdrawn from the contest, believing that commerce is to be too highly taxed under the new code of ethics. They are apt to complain that the rewards of hard work, of ability, of genius in commerce are curtailed by the workings of the new national spirit. And that is true, if one be prepared to admit that the hundreds of great fortunes created during the past decade by municipal graft, by insurance dishonesty, by railroad plunder, by industrial robbery, or by criminal banking are really legitimate rewards of hard work, or of genius.

The average business man, who is not and never has been either grafter, corruptionist, or swindler, looks at the matter differently. He believes that the honest rewards of hard work and ability will be larger under the new idea, because the honest rewards of any business are always larger and surer if waste be eliminated. And graft, corruption, and swindling, profitable as they undoubtedly have been to the men who reaped the harvest, have been nothing else in the world but waste, from the standpoint of the commerce of the country and of the honest business man.

The creation and maintenance of a group of multi-millionaires, by money legally but immorally taken out of the business funds of this country, has been no whit less a commercial waste and an industrial extravagance than is the maintenance of a useless racing stable, or a kennel of overbred hounds, by the private business man.

It is not to be understood that the possession of great wealth, or the mere indulgence in luxury, has become obnoxious to the thinking American. The only wealth that is under the ban is wealth obtained by dishonest or disreputable methods. There remains an army of very wealthy Americans who have gained their wealth by legitimate means, by honest

industry, by real constructive genius. Against these men there is no count.

IV

What is to be the result? When one studies the resources of this wonderful country, its forests, its bottomless mines, its limitless water-powers, its endless fields, its vineyards and orchards, and, above all, the indomitable spirit of its people, there can be but one reply. We may halt by the wayside for a little space; but the march of prosperity cannot be checked. We shall go on. Upon our foreign trade, wonderful as it is, the present generation alone shall build a commercial structure unequaled in history. A new Pittsburg will grow in the West, another will grow in the South, a new New York on the Pacific Slope. These things we know as surely as we know that the sun will rise to-morrow. We knew them, also, four years ago. The only difference is that to-day the nation is resolved that there shall be a cleaner Pittsburg, a cleaner New York. And that is the spirit of the new era in this country.

GOVERNOR HUGHES AND THE RACES

GOVERNOR HUGHES has undoubtedly precipitated a fight by including in his message to the legislature a recommendation for the reform of the laws looking to the stopping of race-track gambling. It is an old question in New York, and in the past the racing interests have been able to beat the reformers.

The success of the racing people in Albany has been due to the Percy-Gray law of 1895, a law which permits pool-selling and book-making on authorized race tracks in the state under certain restrictions. The law, in effect, makes an exception in favor of the race-track betting, the same practices being illegal elsewhere in the state under the constitution, and punishable under the penal code.

To win his fight, Governor Hughes will have to have this Percy-Gray law repealed. The law has been declared constitutional by the Court of Appeals. The vested interests in the racing game in New York amount to about $12,000,000, earning perhaps a million dollars a year from the tracks. This is exclusive of horse-owners, book-makers, and the thousands of men who gain a living, directly or indirectly, from the race tracks, Very adroitly, the racing-men have enlisted the farmers in their cause by distributing 5 per cent. of all the track receipts to the agricultural societies of the state for the maintenance of county fairs. In former fights the agricultural interests have been squarely behind the race-track people.

It is conceded that if the Governor, in his message, had ignored the agricultural interests his recommendation would have amounted to little: it would have been beaten out-of-hand at Albany. He meets the interests of the farmers, however, by adding that the state should make up to the agricultural societies the amount they would lose by the abolition of the gambling on the tracks. This is a strange provision, leading into many questions. It does not seem reasonable that the property-holders of the state should be taxed to make up a deficiency that would arise solely through the abolition of what Governor Hughes considers a vicious and degrading practice.

The reception given to this recommendation by the legislators does not augur particularly well for the success of Governor Hughes's latest innovation. Lukewarmness characterizes nearly all the utterances that have been made on the subject. The ranks of the opposition have not, apparently, been broken. If Governor Hughes wins his fight, he will get the plaudits of all who do not patronize the races themselves, and of all of those who look at horse-racing askance, holding it responsible for much of the dishonesty that crops up every now and again in lesser business circles.

THE TURNING OF THE TIDE

HARDLY had the ink dried upon the pessimistic reports concerning the business of the closing year before the first preliminary reports of recovery began to find their way into print. In some cases, the turn-about was extraordinarily sudden. These were the episodes of disaster and curtailment that had been due entirely to the tight money conditions. The first rebound toward better times and conditions was contemporaneous with the easing of money in New York, which occurred immediately after the payment of the dividends and interest on January 1, 1908.

By the middle of January, money was almost plentiful in the country, although the big banks were still struggling to build up their reserves, which had been depleted during the panic, and to put out of the way the clearing-house

certificates which were issued in the same period. Several banks, toward the close of January, had trouble in getting clear, and not all escaped. The stress of this struggle checked the stock market in its impetuous upward career — a good thing for business at large.

I

Meantime, while the money conditions were returning to a nearly normal state, and real money was beginning to flow healthily through all the veins and arteries of commerce, signs of reviving business piled up. On one day the Carnegie Steel Company and the Pennsylvania Steel Company announced the reopening of some of their large mills which had closed down. The steel trade, a good barometer of general manufacturing business, became permeated with a feeling that the worst was over. Messrs. Rogers, Brown & Co., recognized authorities, noted in the trade a philosophical determination that things would soon right themselves, coupled with a resolution not to attempt to force any quick revival. Prices of pig-iron eased somewhat, and it was noted that the ore-docks were piled with ore, clearly foreshadowing a long period of light production at the mines. Manufacturing in the Pittsburg district was reported at a very small fraction of its normal amount.

II

At the same time, the exaggerated reports of the unemployed found some correction. In New York, it had passed current as the truth that more than 150,000 men were out of work. *Charities and Commons*, an authority in touch with very good information, cut the figure to 35,000. The important point is that the lack of work in this city seemed to be most acute at the turn of the year, and eased off markedly within the next four weeks.

III

In mercantile lines there was little activity, although nearly all houses sent their men out on the road about the middle of January and kept them there, getting returns running from 25 to 50 per cent. lower than last year. As a test of the trade, a silk auction in New York was an interesting feature, 6,000 pieces of goods selling at good prices and with extraordinary celerity.

The worst feature of the December situation, the wholesale cancellation of orders by the jobbers of the West and the Middle West, with St. Louis houses conspicuous offenders, ceased in January, or almost ceased. Some few cancellations followed business troubles here and there, but these were necessary, not wanton nor due to panic feelings in the trade. The heads of the mercantile business found reviving hope for the year 1908. Their courage, which had oozed out as the money panic squeezed them, came back and was perhaps a little more aggressive than the circumstances justified. The Associated Merchants Company, of New York, centred upon the H. B. Claflin interest, made its regular dividend and seemed full of confidence and life.

In other manufacturing pursuits—lumber, leather, jewelry, textiles—the recovery was quite slow. The jewelry trade, taken as the barometer of luxury in this country, is still very flat, and a number of houses have gone down. Perhaps a part of this was due to the strange performances in diamond circles on the Continent, where a weird imposition seems actually to have caught Sir Julius Wernher, of Kimberley fame, and led him into backing the alleged manufacture of diamonds by Lemoine. The story has been pretty well exploded, but the collapse in diamonds lasted long after the myth was generally disbelieved.

IV

Wall Street, of course, led the recovery, as it also led the collapse. The swift upward swing of the stock and bond market was not by any means free from artificial assistance, but it served its purpose. It helped to make possible the resumption of business by some of the failed banks in New York, and it directly made possible some necessary financing by the New Haven, the New York Central, the Missouri Pacific, and the Rock Island. The announcement of a plan for setting the Westinghouse companies on their feet was well received, particularly as the companies paid the regular interest on their debts at the regular time.

On the whole, the situation has very distinctly mended. It has not by any means resumed its normal course, and it is too much to expect any such resumption for some months to come. If the crops of 1908 reach an average, or show signs of being of bumper size, there is no room for doubt that next autumn will have a fair

chance to be noted as the period of recovery to a normal trade condition in this country. If, on the other hand, the crops should fail, the "drag" of the panic will almost certainly carry over into 1909.

THE NEW ART OF NURSING BUSINESS

THE abnormal nature of many recent business troubles is clearly shown by the lengths to which the banks as financial powers have gone into the "nursing business." Instead of open bankruptcy and the usual style of receivers, the idea has been to conserve essentially sound institutions, caught in the stringency, giving the former owners a chance to pull their enterprises out of the slough. An enormous earning power has thus been saved which formal receiverships would have largely curtailed.

There have been some famous instances of this sort of thing in the past.

About ten years ago, in a Western city, two great speculative business men came to grief. The wheels of business were stopped by the shock. All the great leaders of the commercial and the banking world gathered together in a private library to talk the matter over. To them came the two bankrupt speculators and said, in effect:

"Gentlemen, we are ruined. We owe nearly two millions of dollars. We cannot pay it now; but we have a great idea.

"As things stand, our debts are a dead loss to the people who hold them. We have done nothing criminal, and we cannot be punished. You can only levy on our property, and it will not nearly pay you.

"This is our proposal: Some of you are very wealthy. We propose that you lend us on our personal notes four million dollars. We promise to pay it back, with interest, at a certain time. This will enable us to pay our debts and resume business. We have plans that cannot be unfolded in public, but we shall tell them to the people who lend us the money."

That proposal was accepted. The money was advanced by two of the greatest business men of this country. The debts were paid. The two speculative financiers have become, since that time, enormously wealthy. All of their borrowings were promptly repaid.

A bank in New York failed in October. It opened again in January — having arranged with its creditors to pay a small percentage of its deposits on demand and the rest at intervals. A big automobile company, an electric manufacturing company of international importance, two big railroads, several large jewelry houses in New York, a publishing house, and many other companies collapsed during the panic, or about that time. In each case actual bankruptcy of the dangerous and expensive sort was avoided by expedients similar to that given to the two speculative business men ten years ago.

The country is too prosperous for the old-fashioned kind of a bankruptcy orgy. The creditors realize how very frequently this year the failure has been due to natural causes entirely beyond the control of the failed concerns. In most cases they are quite content to wait awhile for their money, and trust the old officers or owners to work out their salvation. Moreover, the common sense of the creditors recognizes that the proper people to run the Westinghouse Manufacturing Company are the managers of it, not half a dozen skilful lawyers, or bankers, or any one else who would ordinarily be appointed receivers. So the banks, to save their present money tied up up in the company, advanced more money and the company goes on much the same as before. In time it will undoubtedly work for tne profit of both the debtor and the creditor.

THE CURRENCY QUESTION

THE study of currency is conducive to insanity. It is perfectly astounding to contemplate the number and the diversity of the so-called "cures" that have been set forth in print as sovereign remedies for the admitted imperfections of our laws. The editors of this magazine have read, and returned, at least twenty articles dealing with this subject. Some of them were sensible, but most of these followed tracks already worn smooth by many feet. Others were weird and wonderful, ranging down to a proposition, seriously expounded, that receipts for wheat, cotton, corn, and other staples should constitute the country's real money.

There are three living plans in sight for the changing of our currency laws. All have merits and all have defects. The Aldrich idea, which contemplates an emergency issue of notes at times of stress, seems sound in principle; but its provisions concerning the security to be placed behind the notes and the manner of issuing the notes, need much revision, and

will probably get it before the project goes very far in the House. The Fowler plan, calling for a sudden change to asset currency, and the sudden sweeping away of our bond-secured money, is also sound in principle; but it is far too revolutionary to be put into effect in a hurry. Such a shift should be accomplished by evolution, not by revolution. The central bank idea, backed by the bankers of the country, would undoubtedly accomplish the end quite as well, or perhaps much better than either of the other plans. The one radical objection to it, as a scheme for the present moment, is that the people cannot be educated to it within the time in which reform must come. It must come by a slow process from precedent to precedent.

The business men of the country will do well to take some interest in this complicated and difficult subject; but one cannot advise them to read all the articles that flood the press of the country concerning the currency schemes, some of them fantastic, amateurish, and dangerous. Nor are these unbalanced ideas confined to print. A strange movement is on foot in various sections of the country, looking toward the guarantee of bank deposits by the Government. Oklahoma has made its new law on this false basis. Bank deposits are not cash, and any attempt to insure them by mandate puts a premium on bad banking, for the bad bank, if legally created, will be guaranteed along with the good. This new movement seems a step backward in our efforts to eliminate bad banking and dishonesty. The constantly recurring reference to the Bank of England as a model system, providing against panic and at the same time guarding against undue inflation, must be understood as the work of the central bank propagandists. The Bank of France, or the Bank of Germany, seems much better adapted to serve as a model. But it is only by studying all of them, with the Canadian system thrown in as a collateral study, that men can come to a true conception of the work that our reformers are trying to accomplish. Meantime, our money remains as good as it ever was.

A WORLD-WIDE FERMENT

THE future historian will probably be interested in these first years of the twentieth century chiefly as a period of extraordinary readjustment in political and social relations all over the globe. The whole civilized world seems to be in a ferment. Bloodless revolutions — and some bloody ones, also! — mark everywhere a changing of the old order. The men of to-day seem determined to solve that problem, as old as civilization itself, of liberty for each individual at no cost to his fellows. This takes the form in the old despotisms of revolt against autocracy; in more progressive monarchies, of greater power for the masses; in the republics, of many forms of paternalism, socialism, and what-not — all aiming, however faultily, to fulfill the truest ideals of liberty. The last month has seen a remarkable series of events from farthest East to ultimate West.

Thus, Japan is facing a new era of governmental responsibility to the nation because of the monstrous burden of taxation under which the people are groaning; India's three hundred millions of subject natives are asking more and more insistently for some voice in the government of their country; Persia (it sounds like a fantastic dream still) has within a year erected a constitution between its people and the ancient despotism; Russia is still in its titanic throes — daring assassinations and grim punishments continually following each other in the chaos whose development no man may determine; but it surely foretells the end of the irresponsible autocracy.

In all these lands men are taking the first steps toward freedom and opportunity for the masses. In Prussia they have come to a further milestone, and fierce riots have accompanied the agitation for universal suffrage.

The erection of a dictatorship in place of a constitution in Portugal, even though it seems to have been in furtherance of much needed reforms, has recently resulted in the assassination of King and Crown Prince and the apparent overthrow of the Premier-dictator.

Even in precedent-loving England there are strange happenings: in January the Labor party (which revealed itself at the last elections as a new and formidable power in the state) decided to merge its political fortunes with Socialism — one of the many experiments of our time in securing that fair chance for all which is the ideal of democracy. In the United States the chief development was the very notable decisions of the Supreme Court, curbing the tyranny of the labor unions — which has in some instances bade fair to equal any army-supported tyranny of monarchical lands. And Cuba, freed from foreign

misgovernment four years back, is to be turned over to the Cubans in another twelvemonth.

These developments are chronicled on the following pages. They are not isolated nor unrelated. They represent the upheaval of the crust of custom and precedent under the pressure of the new ideas of humanity. There could be no more hopeful sign for the future than this passionate determination nowadays to secure justice and opportunity for all, to provide government by the people for the greatest good of the greatest number, to extend the helping hand of the State to the unfortunate — in a word, to strike that elusive balance between the claims of the individual and of society. It is a long road, with many windings, but no observer can fail to notice the progress that is being made.

JAPAN'S APPROACHING CRISIS

A BITTER struggle is in progress in the Japanese parliament, and all signs point to the conclusion that the elections of this year are to be fought on the straight issue of "high taxation." The emigration question, so important in the eyes of the United States, has fallen into the background. The one fact that to-day overwhelms Japan is that the tax rate is at an average of thirty-one dollars a head.

Premier Saionji, the head of the Government party, is held responsible for the enormous budget. The principal item against which the Opposition makes its fight is the item of expenditure for the army, which is out of all proportion to the peace-time needs of the nation. These extraordinary expenditures, part of the price that the Imperial party is willing that the people should pay for the ambitions of Japan, have been vigorously and consistently opposed by the leading commercial interests of the country, led by Baron Shibusawa, the "Morgan of Japan." His son-in-law, Sakatani, resigned his portfolio as Minister of Finance rather than support the budget that calls for the increased taxation for the support of the army.

In fact, the lines of conflict are clearly drawn between the needs of military glory and the needs of commercial success. That Japan has paid high for its military supremacy goes without saying. The cost of living in the Empire has increased one-fifth during the last five years, while the wage-earning capacity of the people has not increased at all. The prices of the securities that represent the railroads and commercial interests of Japan reached the lowest point in the history of the country in the first weeks of this year. In almost every great industry, the last year has witnessed vicious and terribly destructive strikes, due to absolute inability on the part of the companies to pay living wages to their workmen.

The reaction has not been slow. To-day, the masses of people are turning from dreams of glory to the contemplation of their own actual needs, the falling of the business structure, the extreme poverty not only in the great cities and industrial centres but also in the country at large, the grinding weight of the taxes imposed upon the poor. The people are well led. The so-called Constitutional party in the parliament is barely a minority. It has opposed vigorously every step for higher taxation. It will go to the country and make its appeal directly to the people on the ground of their own poverty and want.

It is the part of common sense, in a commercial age, to seek first the commercial well-being of the nation, and after that the military and naval glory of the country. It is a healthy sign that Japan has awakened from its dreams, and that the best of its great statesmen and public men have set themselves to the re-building of its fallen industries.

Some well-informed observers declare that this doubling and tripling of army and navy since the Russian war is in preparation for Japan's open seizure of Manchuria, the idea being that behind the comparatively negligible Chinese forces the ambitious Islanders will find two great European Powers. It is for this colossal struggle, they say, that Japan is girding up its loins; and the ingenious argument is advanced that the nation would speedily become bankrupt at the present rate. A war with America for instance would simply be financial ruin; but an absorption of Manchuria would furnish vast resources, developed and undeveloped, upon which money could be raised at once and which would offer the physical outlet for the expansion that is so much needed.

GROWING LIBERTY IN INDIA

WITH a native boycott against British goods in Bengal and with anti-British riots in Madras and the Punjab, the history of India for last year seems ominous.

The people least disturbed by those phenomena appear to be the English themselves. Early in the year, the authorities deported a native extremist, Lajpat-Rai, only to send him back after a few months to meet a marvelous reception, as if he were a martyr released or a conqueror returning to his triumph. A Socialist member of Parliament, Mr. Keir Hardie, also visited India and did much to encourage and strengthen the extremists who lead the anti-British contingent in India. The Sedition Meeting Act, a repressive measure, has been met by bitter native opposition.

In spite of all this, the average Briton goes upon his way serenely confident, if not unmoved. He laughs at the very idea of the franchise for the Indian natives. He calls the recurring disturbances "growing-pains," and reads, with indulgence and even with sympathy, the impassioned pleas of the Indian orators for more voice in the government, more volition in the matters of taxation and administration. He has no strong objection to the natives possessing souls or minds, so long as they do not dam the current of British control, actual and tangible, over the commerce and the production of India.

Of course, it is absurd to talk of the franchise for three hundred millions of people so long as they are ruled by a handful of aliens; but the definite plans of the moderate element in India for a greater coöperation and coördination between the natives and the Government seem in all respects desirable.

PRUSSIA IN TURMOIL

PRINCE VON BÜLOW'S statement in the Landtag that the Government would not consider either universal suffrage or the secret ballot met with the old, old answer. Forty thousand Socialists made a great demonstration, parading the streets of Berlin and endeavoring to reach the Emperor's palace; the police charged them; a period of fierce rioting ensued; and the hundred injured protestants helped to increase the resentment over the refusal to right these fundamental abuses.

The matter has been two generations in coming to a head. Sixty years ago next month, the Prussian Government faced open revolution — and met it with the concession of a vote for every man of twenty-four years. But the next year the ruling classes had the situation better in hand: they repealed this law, substituting for it an ingenious provision called the "three-class system." By this plan a few of the largest property-holders, who pay one-third of the taxes, form class one; the next highest tax-payers are class two; and the great mass of small tax-payers compose class three. Each class chooses a third of the electors, and the non-property holder has no voice at all. This system, with the open voting and the consequent chances for intimidation, has resulted in giving control over the destinies of thirty-seven million people to about seven million nominally — in reality, to a small group of narrow-minded *Junkers* whose ideas are still those of feudal overlords. In some sections not 2 per cent. of the people vote at all. The people of the middle classes, who should naturally save such a situation ultimately, dare not vote openly, for they are between the Scylla of the great land-owners and the Charybdis of the Socialist agitators.

To add to this burning sense of injustice, the Prussian has overwhelming taxes to shoulder — with still a deficit of over $100,000,000 — compulsory military service, and a steady rise in the cost of the necessaries of life.

It is not a pleasant state of affairs to contemplate, and there are many historical precedents for the belief that the hard answer of the Prussian rulers to these desperate men and women will react upon them some day with terrible force.

MEDIÆVAL PORTUGAL

THE assassination of King Carlos of Portugal and the Crown Prince brought to a close a nineteen-year reign during which the Kingdom of Portugal has made little progress toward the light. The record of the two decades with their constantly changing plots and counter-plots, their strange tales of poison, fire, and steel, their never-ceasing vigilance, their restless watching and waiting for tragedy and disturbance, is not unnaturally crowned by the double tragedy of February. Portugal has demonstrated its right to be considered one of the most backward of the civilized nations.

From the newspaper reports announcing the assassination it would appear that the strong tendency in Portugal to-day is away from monarchy and toward a Red Republic, a republic to be founded in blood, maintained by the bomb, the pistol, and the knife, and ruled by

a group of bloody-handed banditti. A plot unearthed only a week before the slaughter of the King was alleged to include not only the killing of the monarch, but also the killing of Prime Minister Franco and the inauguration of a regular "Reign of Terror" in Lisbon. While the average American, reading the record of Carlos and his extravagant Queen, will sympathize with the desire to get rid of such an incubus, and will, perhaps, go farther and sympathize also with the mad desire for a total sweeping away of the monarchy, few will endorse the mediæval methods proposed for the carrying out of the purpose. The sympathy of our people will rather attend the young successor to this blood-stained throne, King Manuel, the nineteen-year old boy who takes up the heavy burden of government in that unhappy land. He is described as a mere slip of a boy, more French than Portuguese, and all unprepared to assume the terrible burden of fear and responsibility that must rest upon his shoulders.

It is sincerely to be hoped, both for Portugal itself and for the peace of Europe, that the new King will depart widely from the principles of his father. In theory, Portugal has been a constitutional monarchy, with representative houses of parliament. In effect, the King for years past had ridden roughshod over the theory and the law. He had ignored all efforts to check the ever-increasing deficit, and had imposed taxes of fearful weight in direct defiance of the Houses, levying them by royal mandate alone and collecting them solely because the army stood behind him to enforce his laws. Despotism has seldom, in recent years, gone farther.

To accomplish this end, the parliament was brought under the absolute domination of João Franco, described by his friends as a man of genius, and by his enemies as a monster, a cunning, shrewd, but always lying diplomat. Under the administration of this man, the parliament had become a tool of the King. Corruption had become the rule. The allegiance of the upper classes had been won by patronage and gifts without regard to the interests of the State.

The new King rests between the horns of a dilemma. If he follow the policy of his father, he will almost certainly fall a victim to the revolutionary knife or bomb. If he adopt the opposite policy, he will be fought to the end by the army, the upper classes, and the adherents of Franco — or those who will follow his ideas in spite of his disgrace and flight. The reconciliation of these two armed and destructive forces is the task of the young King. Humanity will extend him pity, just as the heart of the world goes out to that defenseless infant who will some day, perchance, become the Czar of Russia.

It has been claimed by Franco that he was using his dictatorship as the only effective weapon with which to stop the unspeakable corruption into which the country had fallen; but the suspension of the constitution and the high handed measures of repression to which he resorted forced the sane Liberal elements into temporary alliance with the anarchists. The result was the murder of his royal master and his own downfall.

CUBA TO STAND ALONE

SOMETIME during the first six months of 1909, Cuba will make another attempt to stand up alone. Secretary Taft recommends that the American protectorate end about March or April of that year. President Roosevelt wants the evacuation to take place before February 1st, that is to say, during his tenure of office.

The report of the Governor of Cuba is hopeful, though it seems, to the lay mind, to deal largely in generalities rather than in specific proofs of the facts alleged. One notes, for instance, that the necessary reforms in justice, elections, civil service, and many other departments of official life have not yet been put into effect, in fact, have not yet progressed beyond the committee stage. It is sincerely to be hoped that something more than a committee report on these vital matters will form the basis of the nation's hope for decent and effective government in Cuba, before the time comes to evacuate.

The average American is not worrying very much over the future of Cuba. The people to whom this question is most vital are the large moneyed interests who have invested heavily in the Island, notably the interests identified with the sugar and the tobacco trades. They, and the backers of electric, power, and railroad companies have a large stake in the future of Cuba. They are entitled to be heard; but, unfortunately for them, the eve of a national election is not a good time to obtain the ear of the United States Government in the interests of the

so-called "trusts." Justice, it may be, is this year tempered not so much with mercy as with expediency.

At any rate, in the words of Secretary Taft, "good faith and policy both" are to be consulted, and the little Cuban Republic is to make another attempt to walk, even though there are "important interests that would be glad to delay our stay there for years."

CLIMBING THE LADDER OF PROGRESS

SECRETARY TAFT'S report on the progress of the Filipinos is a clear and interesting document, containing the first definite information from headquarters concerning the Government view of evacuation.

Both Mr. Taft and President Roosevelt believe it will be a generation at least before real self-government can be given to the Filipinos. From a political point of view, the report is a strong plea for an open market in the United States for Philippine products.

The Philippine Assembly is spoken of hopefully, but with an almost indulgent tone of paternalism. The Secretary proposes, it is true, that the Assembly be permitted, if it likes, to establish an agricultural bank; but on the whole one is not likely to forget, in reading the report, that the Assembly is little more than a sort of school for self-government, and that only 12 to 15 per cent. of the people have the privilege of voting for the election of representatives. The Secretary's endorsement of the Assembly's choice of Señor Osmana as President is frank, but hardly official in its tone.

The Filipinos are at school, learning the rudiments of self-government and progress. There they are likely to continue for another generation. Meantime, the United States carries the burden, feeling it little, perhaps, today, and less to-morrow. The sober courage of the country will endorse the view of Secretary Taft that the last thing we must think of is the abandonment of the Philippines in the present condition of affairs.

AN AMERICAN BENEFACTOR

IN the death of Morris K. Jesup, the country loses a citizen of the finest American type. He combined, to a degree too rare, the keenest and most brilliant business instinct with a breadth and liberality of mind that made him a true citizen of the world. Looking back over his long career, one finds it difficult to say whether he won most honor and success in his long and brilliant tenure of the presidency of the New York Chamber of Commerce or in his manifold charities and philanthropies and his generous support of private American enterprise.

Mr. Jesup was a Wall Street man, a type of the fine old school that stands for all the best traditions of the banking profession. For thirty-two years he carried on a private banking business in New York, and at the end of that long labor he stood high, not only in his chosen profession, but in the confidence of his associates and the public.

At his death he was seventy-eight years of age. For nearly forty years he had given unselfishly of his time and his money in the furthering of philanthropic and public enterprise. Of education, in all its forms, he was a firm supporter. His door stood always open to such charities as the Deaf and Dumb Institute, the Sailors' Snug Harbor, the Y. M. C. A., the Mission and Tract Society, the hospital societies, the charitable guilds, the churches, and the rescue associations of all sorts. The best of his life and his labor was given, freely and at great sacrifice, to the alleviation of human suffering and the softening of human misery.

Also, he followed Knowledge eagerly. To him the American Museum of Natural History of New York owes debts it cannot measure. To him the scientific world owes the fruit of the splendid and successful expedition which in 1897 made ethnological and archæological exploration along the Columbia River in America and the Amoor River in Asia, bringing back from the latter many secrets of the frozen North. In recognition of the value of this service the Czar decorated him with the order of St. Stanislaus. Better known, perhaps, is his liberal backing of the Peary Expedition, which added still more to the world's knowledge, and gave to our Museum its high standing in the matter of Arctic research.

At a time of doubt and uncertainty, when honorable traditions seem concealed in the clouds of distrust, when many honorable careers fall into doubt and uncertainty through exposure piled on exposure, it is a hope and an inspiration to look back upon the career of such a man as this. Mr. Jesup was a a banker, a Wall Street financier, a typical American of the larger type, yet he leaves to his country, as the best of his bequests, a

reputation unsullied and unstained. That, of itself, is the greatest of his triumphs.

AMERICA'S GREATEST COMPOSER

THE death of Edward A. MacDowell, at the age of forty-seven, removed perhaps the only American musical composer who had universal recognition as a master of his art. Indeed, MacDowell was ahead of his time, and his high ambition and tremendous energy beat against conditions here that helped to bring about the nervous breakdown which clouded his last two years. He spent his student years abroad, at the Paris Conservatory, at Stuttgart, Wiesbaden, Frankfort, and Darmstadt. It was admirable training for his poetic temperament, both in musical thinking and in that patient systematic effort at which the Teuton excels. He came under the influence of such inspiring personalities as Clara Schumann and Liszt (who is said to have once asked the young American to play one of his compositions at a Zurich music festival), but in spite of these fourteen years of foreign study at the formative age, MacDowell remained an American and drew his best inspiration from his native land. His songs and more ambitious compositions, like the "Indian Scribe" and "New England Idylls," are always sane and healthy. His work was subtle but never decadent; and he leaves a large measure of accomplishment both as a composer and as a teacher who for seven years was a fountain of inspiration to the students at Columbia University.

A LITERARY MAN OF YESTERDAY

MR. EDMUND CLARENCE STEDMAN was one of the few remaining links of our world of letters with the past generation. The difference between those times and these can hardly be stated more forcefully than by recalling that Stedman, in 1861, was the Civil War correspondent for the New York *World* — a more incongruous association could hardly be imagined to-day. Nor is the comparison entirely flattering to our motor-car age, when even literature seems to feel the necessity to "step lively." Pegasus is too slow and coy a steed for us; doubtless he will shortly be ousted by the aeroplane. Mr. Stedman was by no means removed from his fellows; on the contrary, he had edited a country newspaper, had been a member of the New York Stock Exchange for thirty years, and, by reason of his social temperament and his presidency of the American Copyright League and the National Institute of Arts and Letters, was always a man among men. But he never lost a certain fine "old-fashioned" attitude of reverence toward literature; he fought vigorously for the dignity of letters and of the author; and his influence was ever toward the uplifting of literary work to a place a little above that of sordid commercialism. Add to this, his notable achievements as a poet (he left eight volumes of verse); as a critic who produced "The Poets of America" and "The Victorian Poets," and as a voluminous editor — and it is apparent what a loss has been sustained.

GUESSWORK AT PANAMA

THE United States is engaged in a task at Panama that may call for the expenditure of anywhere from $250,000,000 to $500,000,000. This is the gist of the statement made before the Senate Committee on Interoceanic Canals, by Colonel Goethals, chairman of the Isthmian Canal Commission, the man responsible, above all others, for the carrying on of the work.

It is as well to confess that uncertainty, expressed in nine figures, is not a comfortable frame of mind, even for a nation so rich and so reckless with money as is this nation. Probably, in the long run, it will make little difference whether the cost is the lower figure or the higher. Yet it seems a trifle foolish, after three or four years of hard work, after two large bond issues, after many tons of ink have been wasted in demonstration after demonstration, after hundreds of thousands of dollars have been spent in survey after survey, that this business-like nation should be obliged to satisfy itself with the off-hand estimate of Col. Goethals:

"Oh, anywhere from $250,000,000 to $500,000,000 will measure the cost!"

Would it be too much to ask that the Government use, in its measures at Panama, a little more of the business exactness required from the spenders of private capital, and a little less of the splendid generalities that characterize the estimates of cost of Government work, both Federal and state? When a group of capitalists undertakes, for instance, to build a great new trunk-line through the Sierras, or to push a new tunnel under the North River at New York, the people who are going to supply the money want to know,

roughly, how much it is going to cost. They feel, rightly or wrongly, that they ought to know. They think that the men responsible for the plan are also responsible for this information. The Government might, with profit to itself, consult the specifications and estimates filed by the Pennsylvania Railroad before it created its first fifty-million dollar debt for the building of its tunnels.

Undoubtedly the chairman of the Commission, when he made his statement, knew what he was talking about. It is true that those in charge cannot guess the cost of that canal within two hundred millions of dollars. This being so, the people may conclude that the higher figure will, in the long run, prove too low. Is it not about time that the Government furnished to the public all of the information and all of the estimates that it has in its possession and that it can get from reliable sources? Every six months or so, new bonds will be issued to finance the work. Does not the rule of publicity in finance, so rigorously enforced and so eloquently talked about at Washington, demand from the Government, on behalf of the people who will be ultimately responsible for these debts, as full and as clear a statement as can be made, to cover both the uses to which the funds have been put and the total of future demands for such funds?

A WATERWAY UP THE ALPS

IT has become almost a truism that a modern engineer can do anything that he is asked to do, provided only that he has the funds at his disposal. It will, therefore, not surprise the engineers, however much it may startle the layman, to learn that Italian engineers have projected a canal, to cost about $100,000,000 or more, to open a new waterway from Genoa to the Lake of Constance, high up in the Alps.

The project is not visionary. It is backed by the King of Italy, planned by Caminada, a noted Milanese engineer, and approved by very influential senators and others high in the government of Italy. From this distance the cost mentioned seems enormous, but that is merely because we fail to understand the trade conditions of Europe.

To-day the traffic of this whole central region is drained to the northern ports, Antwerp and Rotterdam in particular, despite the fact that Genoa is only about half of the distance from the region where the traffic originates. Italy, therefore, intends to supplement the geography of the situation, and to gain for itself the immense forwarding trade to and from this region.

Commerce is an inexorable master, in Europe no less than in this country. Glancing over the enormous engineering feats of latter days, the Atbara barrage, the Isthmian Canal, the improvement of our waterways, the mooted canal from the Great Lakes to the Atlantic, one is driven to the conviction that commerce is, in truth, the most imperious ruler that ever drove men and races onward.

THE PUBLIC AND THE FORESTS

IT seems likely that the Currier bill, or some similar one, appropriating the money necessary to create national forests in the Appalachian and White Mountains, will be passed before Congress adjourns. The preservation of the Appalachian forests is of particular importance because they contain the greatest remaining supply of hard wood in the country and because among them are the headwaters of more than two-thirds of the navigable streams of the United States. With these headwaters protected, floods may be controlled, navigation improved, and electricity generated by water-power. The following letter from Mr. Augustine T. Smythe, of Charleston, S. C., gives forcibly one of the many reasons for the measure.

"In the Carolinas and Georgia, there is invested in cotton mills, run by water-power alone, over $40,000,000. The horse-power utilized is almost 106,000. The spindles turned number approximately 2,800,000. They consume annually nearly 900,000 bales of cotton, worth when manufactured over $70,000,000. The hands employed number 60,000. Counting families, 240,000 people are dependent upon these mills. This vast industry faces destruction. The cutting of the Appalachian forest means its end. A National Forest Reserve in the Appalachian in the only salvation."

On January 30th there gathered in Washington, in support of the bill, governors, foresters, and geologists of the interested states, delegations from commercial bodies, from the National Lumbermen's Association, the American Civic Association, and the Institute of Electrical Engineers (interested in the conservation of water-power); in all about two hundred delegates. Against their concerted attack,

Speaker Cannon, who has long blocked the Appalachian bill, is reported to have said:

"I don't see how I can hold out against it. When New England and the South get together on a proposition, it is a hard combination to beat."

Whenever the people become really alive to their interests, the professional politician, even from a point of vantage, "cannot hold out against" them. The cheerful fact about the forests is that the public is interested and well-informed enough to demand their protection.

THE INLAND WATERWAYS

CLOSELY connected with the preservation of the forests, but not so generally before the public, is the control of the inland waterways. There are many projects planned: a ship-canal from the Great Lakes to the Mississippi; inside canals along the Atlantic Coast; various improvements in the Mississippi and its tributaries; a system of storage reservoirs in the Appalachians, described in this magazine, and many others. To make one great, comprehensive plan for dealing with all the waterways and stop the haphazard work on the problem, the President has appointed the Inland Waterways Commission. After much investigation, it is now preparing a voluminous report. This will be issued before the meeting of the conference for the preservation of the national resources between the President and the governors of all the states in May. From this notable and unique gathering — there has never been such a conference before — there should come a great plan for the improvement and use of our rivers, prepared by recognized authorities and backed by the national and state executives, and so thoroughly placed before the nation that it will be in little danger of mutilation by small politicians, or of death through public indifference.

THE ENGLISH LABOR PARTY TURNS SOCIALIST

THE Labor Party of England took a momentous step late in January. The great conference at Hull, after protracted and thorough debate, adopted the following resolution:

"That the time has arrived when the Labor Party should have as a definite object the socialization of the means of production and distribution and exchange, to be controlled by a democratic State in the interest of the entire community, and the complete emancipation of Labor from the domination of capitalism and landlordism, with the establishment of social and economic equality between the sexes."

This seems "to commit the Labor Party in a very complete sense to Socialism"— an event of the utmost significance when one considers that there are already 41 Labor members in Parliament. It is true that the conference was far from unanimous, and it will take much diplomacy and careful management on the part of the extreme leaders to hold together a party which has taken so radical a step by a vote of 510,000 to 459,000. But it means a clear marking out of the lines on which Labor proposes to fight in England, and it is the most definite programme of Socialism yet put forward by an organization with real voting power and a full treasury behind it.

ONE LAW FOR LABOR AND CAPITAL

IN THE light of these rather sensational happenings in England and of the jubilant announcement by one of the Socialist organs that this party has grown in the United States from 2,000 in 1888 to something over half a million to-day, the labor decisions by the Supreme Court last month are most notable. For there has been a growing feeling that we were in grave danger at some points of being urged by Labor interests into special and unfair legislation.

Two most important cases were decided almost simultaneously by the Court.

(1) That section of the Erdmann law (enacted ten years ago) which forbade railroads or other interstate carriers to discriminate against an employee because of membership in a labor union was declared unconstitutional. The court held this to be "an arbitrary interference with the liberty of contract which no Government can legally justify in a free land"; and this "invasion of personal liberty as well as of the right of property" is consequently nullified.

(2) Most fundamental of all was the pronouncement against boycotting, to which labor has so frequently resorted in its battles of late years. A Connecticut hat-manufacturer brought suit for $80,000 damages against 200 members of the local union, alleging that they had suffered to this amount in their interstate trade by reason of the open and relentless boycott established by the union.

The Supreme Court held unanimously that a case within the anti-trust statute was set up, and the manufacturers are consequently in a position to recover from the boycotters three times the amount of the damages they have sustained, in accordance with the Sherman law.

Nothing could be more gratifying to the sound common sense of the average citizen than this decision. The boycott is unfair and un-American; now that our highest court has pronounced it illegal, we may hope that it will become a less popular weapon in labor quarrels.

The ordinary business man, too, who has been at times fearful and upset by sensational political developments and by ill-considered legislative experiments and proposals, will take fresh courage from this new evidence of a sane restraining power which can be relied on. We may count on progress but not on recklessness.

WHY THE RAILROADS KILL

THE partial record of train accidents in 1907 published by the Interstate Commerce Commission shows that more than five thousand people were killed and more than seventy-six thousand injured on American roads in that year. This includes only passengers and employees. In all probability, the number of "other persons" killed and injured is larger than the totals given above.

The report has been very carefully analyzed by Mr. W. H. Boardman, editor of the *Railroad Gazette*. His analysis shows that the lack of proper railroad discipline is the greatest contributory cause to the slaughter. Behind that lack of discipline the critic finds one compelling cause, a cause against which the general manager has struggled in vain. It is the labor union. Mr. Boardman makes the flat statement that the labor unions are arrayed against the general manager in practically every effort he makes to eliminate inefficient men, or to establish a code of discipline that will be really efficient.

It is a serious charge. It finds substantiation in careful articles in the *Evening Post*, the *Atlantic Monthly*, and many other publications. More than that, it is confirmed by every general manager who will consent to talk about it. Mr. Boardman points his opinion very clearly by the statement that "the unions have more authority in the employment and discharge of train crews and enginemen than has the management on every railroad except the Reading and the Burlington.

In the *Atlantic*, Mr. J. O. Fagan, himself a labor-union man, makes the same flat statement in very startling words:

"For a great many years the influence of the railroad labor organizations has been consistently exerted not only to raise wages and to improve conditions, which, of course, is perfectly proper and justifiable, but also to nullify discipline, to destroy personal management and authority, and to obliterate from all schedules and working agreements any reference to or consideration for the paramount interests of the traveling public."

The killing by our railroads is a national disgrace. The cause of it is manifold. The demand for excessive speed, the lack of proper crossings, of fences, of guards, of watchmen, the innate recklessness of our people, the unbridled competition on the main lines are all contributory causes. To these must be added, as the most important single cause, this lamentable lack of discipline, traceable, in part at least, to the labor union as an institution.

PERMANENT INVESTMENT IS NOW BEST

THE wise investor is not to-day seeking temporary investments for his funds. If in the first half of 1907 he put his money into notes and maturing bonds, he should now be seeking an opportunity to sell his notes and short bonds, taking up good long-term bonds or gilt-edge stocks, if his taste lies that way, so that for many years to come he may enjoy the larger revenue that comes to the buyer who gets high-class investments at low prices.

The exact moment of highest profit in making this change came in November last. In its financial article in the November

number, THE WORLD'S WORK pointed out the fact that the shrewd buyer who had saved from 5 per cent. to 15 per cent. of his capital by selling bonds in the early months of the year and by buying short-term notes of the standard railroads should sell his notes, or at any rate cease to buy more notes, and seek permanent investments for his capital. Judging by letters received from investors in the meantime, many followed this advice. The letters continue to come, many of them asking whether or not the advance in high-class bonds since that date has changed the situation enough to vitiate the advice given at that time.

To a certain extent, the market prices have lessened the advantage to be gained; but, on the whole, the high-grade bonds are still the better of the two classes of investment. I do not advise purchasing high-grade bonds with money that may be needed in business or in buying a house, or in any other pursuit within the next two or three years. If a man has a sum of money saved for a definite purpose and is likely to want it before, say, 1915, he had better invest it in notes or bonds maturing about the time that he expects to use the money. Only in that way can he be certain of his whole principal and interest.

If, for instance, one has funds withdrawn from business, and expects that in July or August, 1908, he will want it again in his business, he had better not tie it up in long bonds. If he cannot loan it on six months' loans in his own locality, he can buy, for instance, a block of Utah & Northern first-mortgage 7 per cent. bonds, which will fall due and be paid on July 1st. Any good bond house can get them for him, probably to give him 6 per cent. interest. The money is certain, because the bonds are a first-mortgage on part of the Union Pacific, and come ahead of all of the big bond issues of that company, as well as all of the stocks. There are many other similar bonds, so far as maturity goes; these are cited merely as an example. A man may get good bonds to mature on the first day of almost every month of every year, and may learn in that way exactly what interest he will get and exactly when he will have his principal.

This method, which is a special kind of investment, is here outlined because it is thought that many millions of dollars have been taken out of business for the time being. There is no need to let funds of this sort lie idle. Few men are in a position to make loans of their money in commerce, as the banks do. Every business man who has idle funds should at least take the trouble to look into this scientific and sensible method of gaining some return from the money which he has been compelled to take out of his business. It must be added that funds, if well invested in this way, are not tied up, because the investment can be turned over at any time in the market at practically the same price paid for it. If business should improve faster than expected, the funds to carry it on will be almost as handy as though they lay in the bank.

For the average investor, who wants a long and a steady return from his money at a good rate, the high-grade bond market is to-day the proper field for study. It is true that the short-term notes and bonds will give him 6 per cent., or even more, while the bond market will not pay much over 5 per cent. at best; but there is little advantage to the average buyer in getting 6 per cent. for a couple of years and then taking his chances in reinvesting his funds. Judged by past history, he may not be able to get more than 4½ per cent. on bonds that he will buy at that time, bonds which would to-day yield 5 per cent.

Briefly, then, I propose to take up some of the more important points to be considered in making long-term investments in good bonds at the present time. To make the matter concrete, the writer recently directed a fund of $15,000 for an English investor who is not at all familiar with the American market. He wanted to be "comfortable" in his investment. He desired to be as far removed from bankruptcy, or other financial complication, as possible.

The advice given to him was to buy only the bonds of the strongest railroads in this country. The final selection gave him bonds of the New Haven, the Pennsylvania, the Chicago, Burlington & Quincy, and the Lake Shore. Some of the securities were short-term, and the net return from the fund is nearly 6 per cent. It will surprise a good many people to learn that such an investment could be made in the securities of these railroads.

To-day, looking for an investment that will run for more than ten years, one should first study these same roads, adding to the list,

perhaps, the Chicago and Northwestern, the Great Northern, and the Illinois Central. These seven railroads make, perhaps, the "select list" of our American rails. To them the conservative investor may turn with perfect confidence that their bonds will give him ample security for principal and interest.

What bond, of each railroad in the list, will give an investor the best net revenue for a ten-year period or longer? Which one, or two, of the bonds picked out will be most satisfactory? These are the questions that the average investor will want answered. By way of definite information, the best-paying bond of each road is indicated below, with the rate of interest to be gained by buying it at about the present prices, and holding it until it is paid off:

Road	*Bond*	*Rate*	*Yield*
Pennsylvania	Long Isl. ref., 1949	4%	$4.60
New Haven	Debenture, convertible	6%	5.00
Lake Shore	N. Y. C. Equip., 1918, etc.	5%	5.10
Northwestern	Debenture, 1921	5%	4.90
Gt. Northern	C. B. & Q. coll., 1921	4%	4.60
Ill. Central	Coll. Trust, 1952	4%	4.30
Burlington	Iowa Div. s.f., 1919	5%	4.60

It will be seen at once that in this field there are not many chances to get really cheap bonds. If I were to select for the average investor from this list, the choice would fall to the New Haven new debentures and the equipment trust notes recently issued by the New York Central. They bear the guaranty of the Lake Shore, Michigan Central, Big Four, and Chicago, Indiana & Southern — in addition to that of the New York Central. They mature on November 1st, and can be bought to come due in any year from 1908 to 1922.

The New Haven bonds are peculiar, probably because they were sold during the panic period and had to be peculiar in order to find any kind of a market. In fact, the reason why these bonds and the New York Central notes are probably the cheapest of the list is found in the fact that both issues were "emergency issues"- that is, were put out during the present stringency. Probably, when times come back to normal, these two bonds will be hard to buy at their present prices.

This is the narrowest possible field for investment. I do not believe that the average investor need confine himself to it. It is outlined to give some guidance to the people who want to be owners of bonds that represent only the very strongest of our railroads, and to get the best possible results out of such investment.

The search of the average man for investments will carry him away from these bonds, except, perhaps, the two issues selected above and some of the more recent debenture issues by the Lake Shore and the New Haven. Full information about these newer issues may be obtained from any manual of bonds, or from any banking-house. The bond dealers are always glad to send such information to anyone who wants it, whether he be a customer or not. If a man writes to a bond house of high standing, and asks it to send him information about bonds from time to time, he will probably receive all the information he may want. A specific question about any issue will also be attended to, without any expense to the questioner.

Probably the best field for the average man to-day lies in the class of bonds that are usually called "middle-class." They may be first-mortgage bonds on pretty good railroads, second-mortgages on very good railroads, general mortgages, refunding mortgages, convertible bonds, or even debenture bonds on strong railroads. It is a big, broad class, including nearly all the bond issues that make up three-quarters of the railroad bond transactions on the New York Stock Exchange.

A few of these issues of bonds are noted below, with about the return that may be obtained by purchasing them to-day. Two months ago, many of them sold at prices from 5 to 12 per cent. lower than their present prices. Yet, to-day, they are nearly all many points lower than the high price at which they have sold within the past four years:

Bond	*Yield*
Atchison, convertible 5's	$5.10
Rock Island refunding 4's	5.00
Norfolk & Western divisional 4's	4.80
St. Louis & San Francisco refunding 4's	5.50
Southern Pacific refunding 4's	4.70
Oregon Short Line refunding 4's	4.80
Colorado & Southern refunding 4½'s	5.40

These are pretty good bonds to give such returns. One in the list, the Rock Island Refunding 4's, is legal for savings banks in New York. The others are not legal. Practically all of the bonds are new issues, having been created within the last few years. They are "junior" to the older issues of the same companies; that is, they all have other bond issues that have a claim on the property coming ahead of the claim of these bonds.

"NO SHADOWS EXCEPT OUR OWN PAINTED SPLASHES OF AZURE UPON THE ORANGE SAND"

AN AMERICAN ARTIST IN THE SAHARA

ITS LANDSCAPE OF RIOTOUS COLORS AND THE PICTURESQUENESS OF ITS PEOPLES — THE CARAVAN COMMERCE OF A SEA OF SAND-DUNES AND OASES

BY

CHARLES WELLINGTON FURLONG

(AN ADVENTUROUS ILLUSTRATOR WHO WENT TO THE GREAT DESERT FOR HIS MATERIAL, AND WHO IS NOW IN PATAGONIA)

FOR a thousand miles along the western half of North Africa, the Great Desert is screened from Europe by the Atlas Mountains, whose lofty peaks cut a ragged line along the sapphire vault above them. At their base the Mediterranean, under the yellow light of the southern sun, breaks unceasingly against the dark coast-rocks in a glistening band of gold which at night, like a scimitar, flashes in phosphorescent streams of silver fire.

For a thousand miles along the eastern half of the continent, the Desert meets the coast and its golden sands blend green with the blue of the sea. But here nature, as though timid at thus baring the Desert to the men and the winds of the north, has shrunk back the coast-line three hundred miles from the highways of water-travel and lined the barren shores with hidden reefs and dangerous quicksands.

The desert eagle soaring far above the tawny surface of the Sahara looks down on great, wonderfully shaped sand-reaches; here merging softly into broad expanses of desert grass, or creased where dry river-beds have been etched into the plains; there vignetting among the foothills of heat-soaked mountain ranges whose loftiest peaks are crowned with turbans of snow.

The fertile littoral and the mountainous region of Barbary, which extends as far back as the high plateau lands, are called by Arabs the *Tell*. It is a remarkably rich grain-producing country. Then comes the territory which they designate the *Sahara* — a country of vast tablelands over which is sprinkled a veritable archipelago of oases. Here, under the shadows of their date palms, the inhabitants grow gardens and graze flocks and herds on the open pasturages. Due to the imperfection of geographical knowledge, the name Sahara was erroneously applied by Europeans to the entire region of the Great Desert. Beyond these tablelands of the Sahara lies what to the Arabs is the real Desert, called *Guebla*, or South, a

THE PEOPLE OF THE DESERT AT PLAY

"Fantasia," a warlike sport, takes the place of our baseball.

vague term applying not only to the arid wastes which we call the Sahara, but also to its hinterland, the Sudan.

THE PEOPLE OF THE DESERT

The native races who people these three great natural divisions of northern Africa may be classed under three heads — Berbers, Arabs, and Blacks. The Berbers are descendants of the countless Semitic hordes which centuries ago came from no one knows where and settled throughout the mountains and plateau lands. The Arabs are the progeny of those Islamites who swept like a whirlwind out of Arabia across the African deserts and the vales of Spain till their scimitars flashed on the banks of the Loire and the muezzin's call echoed through the valleys of the Basques. Lastly, there are the itinerant Blacks, who in small tribes have wandered north from the Sudan, or have been driven up under the crack of the slave-whip. All these people profess Mohammedanism, and intermarrying to some extent has gone on for centuries.

The Berber race is best represented in Barbary by the wild Kabyles of the Atlas, and in the heart of the Sahara by the fierce desert buccaneers, the Tuaregs, only by whose leave the trader passes south of the plateau lands. Moor and Bedouin best typify the Arabs; the Moor is a town-dwelling Arab, the Bedouin a nomad. Of the Blacks there are two classes, the bond and the free.

In the vilayet of Tripoli there is a controlling Turkish army. In almost every town of Barbary is the Oriental Jew, while people of the Christian nations vary numerically in the different states, according to their interests.

HAGGLING AND BANTERING IN THE MARKET-PLACE

"Here the human streams of brilliantly-garbed Orientals converge, then widen out into a great, confetti-covered lake"

THE GLORIES OF THE DESERT'S COLOR SCHEME

The daily aspect of the Sahara is the reverse of that of our country, for in the Desert the landscape is light against the sky, which in color so nearly complements the orange sand as to greatly intensify the contrast. When day breaks on the Sahara, the sun shoots long shafts of roseate light through the interstices of the palms; their dark red-violet shadows

"ROLLING DUNES OF SAND UNFOLDING, EVER-UNFOLDING, PHANTOM-LIKE"

wriggle and blend away over the gray-pinks and greens of the dew-wet sands. Soon the violet mists have turned to gold and day has spread its brazen mantle on the sun-scorched desert. You feel the strange weirdness, the uncanny solitude, the oppressive heat and monotony which make the day's work a constant fight against fatigue, ennui, and sometimes sun-madness. Watch the sun sink and the color of its light sift through space as through gems; there, where the blue sky lowers to the hot sand, it might have filtered through some green peridot of the Levant. Such are some of the aspects of the Desert whose charm places one under a spell which is beyond the power of words to make real to the imagination of one who has never seen it.

ARAB AND BLACK CARAVANEERS
"The men who conduct the caravans have neither horses nor tents"

A RIDE THROUGH DESERT SANDS

It is little wonder that the ancients saw in the Sahara, dark-dotted with oases, the graphic simile of the leopard's skin. It was on this leopard's skin that one mid-July day I looked from under the broad lip of my sun-helmet across the desert wastes of Tripoli. The call of those limitless reaches is as subtle and insidious as must be that of the snow-fields of the Arctic. Listening to it, one is beguiled onward against the gentle pressure of its capricious southeast breezes, under which the date-palms nod their graceful crests over the murmuring oases.

No sound but the short scuff of our horses and the creaking saddle-leathers broke the stillness; no shadows except our own painted splashes of azure fell upon the orange sand. South, the almost interminable African main reached out to the land of the Blacks; west to east it swept the whole width of Africa. I realized that even at the Red Sea it merely paused for a moment at the brink, then dipped beneath the limpid waters and continued across Arabia, Persia, and into northern India, covering altogether about twice the area of the United States. Many miles behind me white-walled, bastioned Tripoli lay on the edge of the coast like a great silver shell in a stretch of golden sand, and I felt that somehow I had drawn back the veil of ages.

Tripoli, a vilayet of about 35,000 people, is the nearest point on the coast to the central Sudan; consequently, it is the focal point of the great trans-Saharan trade routes. It is the headquarters of the Pasha, commander-in-chief of the Turkish army of occupation. No Occidental stranger enters the country

A CARAVAN OF THE COMPAGNIE SAHARIENNE BREAKING CAMP
"Day has spread its brazen mantle on the sun-scorched desert"

"FROM THE YELLOW, SUFFOCATING GLOOM THE SURVIVING REMNANT OF A CARAVAN EMERGES"

without a viséed passport and no one is supposed to go into the Desert back of the town without special permission from Constantinople, which is almost impossible to obtain. However, through the influence of friends in Tripoli, permission to travel through the Desert was given me by the Pasha, but I was spied upon over the greater part of my route.

My outfit was composed of three Tripolines, two horses, and a large pack-donkey. Beside me, on a dapple-gray stallion, rode old Muraiche, my head Arab. His hooked nose was like a vulture's beak, and his crafty eyes looked out from a bronzed and wrinkled physiognomy.

My trail sometimes led through districts of clayey, sandy soil over which desert grasses undulated softly in the hot wind; here the trail was hard-packed and easily discernible. Where it descended into the dried river-beds, the tread of generations of camels had worn ravines ten or twelve feet deep. These interlaced like the paths of a maze, and passing through them with a caravan was like a constant game of hide-and-seek, for every man, camel, and donkey took his own course. During the greater part of the year these river-beds are veritable ovens of heat, but in winter they become

SAHARAN DANCING-GIRLS, MANY OF WHOM HAVE A STRANGE, BARBARIC BEAUTY

Ahead of us my other men—Ali, an Arab of the lower class, and Mohammed, a powerful Berber—trudged ankle-deep in the sand beside the donkey. Sometimes we varied the monotony of the march by linking ourselves to some caravan which, like a colossal sand-viper, twisted its way among the sand-dunes.

It is a mistake to consider the Desert one great waste of level sand. Sand there is in abundance, but there are also rocky areas, high mountains, and tablelands over which sweep the cold, penetrating winds of the African winter. Snow even has been known to fall in the highlands. But after the rains in the spring the whole country seems to burst forth in a wealth of flora.

raging torrents in which men and animals frequently lose their lives. In the sandy areas the trails are often mere directions and the Arab's compass is the sun and the stars, for the passing sandstorm not only quickly obliterates all tracks but sometimes a single one changes the topography of the landscape.

One day we rode our exhausted horses under a temperature of 155 degrees in the sun. There was no shade except our own shadows, and these we tried to throw upon our horses' heads as much as possible, for we had little hope of their surviving the hard pull over the last stretch of mountain trail. Almost every step was a stumble, and it was a staggering

IT IS A LAND WHERE THE LANDSCAPE IS LIGHT AGAINST THE SKY

A STREET SCENE IN A DESERT TOWN
"The light sifted through a rainbow of sand-dust"

"A CARAVAN OF BEDOUINS WHO, LIKE THE WILL-O'-THE WISPS THAT THEY ARE, SWEEP BY WITH ALL THEIR BARBARIC PARAPHERNALIA"

gait that at nightfall brought us to a small town, where we halted for two days to recuperate. At times, the heat on the Desert is so oppressive that respiration is difficult.

THE CARAVANS OF COMMERCE

For centuries these trails have been the highways of traffic, the great arteries of the Desert oft red-painted with the life-blood of caravans. The respect paid to the adventurous caravaneer is no small criterion of the fatigues and dangers which attend the traveler. Caravans vary in size from that of some nomadic trader or esparto-picker, who trudges beside his few camels on his way to some local market, to the great trans-Sahara trade caravans which I have known to number 13,000 camels, not to mention donkeys, goats, sheep, and dogs Such a caravan is rarely met with: it takes a year or more to outfit; thousands of dollars are invested by Arabs and Jewish merchants, and men and animals must be carefully selected. Its numerical strength is increased by smaller caravans whose sheiks, believing in the safety of numbers, often delay their own departure for months.

Moving south from Tripoli, it must cover some 1,500 miles of arid desert before it reaches one of the important marts of the Sudan — Bornu, Wadai, Kuka, or Kano. Tribute and homage are exacted on the route by the Tuaregs, who in return give safe convoy to the caravan, often by arrangement extending this through adjoining territory. These swarthy guardians, mounted on their lurching camels, invariably prove true to their trust, defending the caravan with all the ferocity of their leonine natures.

After many stops and leaving many animals and some men to the vultures, the caravan, if fortunate, reaches its destination. There its merchandise — mostly Manchester goods, silk, raw silk, and cotton goods, but including amber, beads, etc.—is bartered for the products of the Sudan: skins, ivory, ostrich feathers, guinea corn, and gold-dust. A year, perhaps, after its arrival it begins the return voyage with a cargo likely enough amounting to nearly a million dollars in value; and it is a gamble whether it ever reaches Tripoli.

LUNCH HOUR AT MR. FURLONG'S CAMP IN THE SHADE OF THREE PALMS IN AN OASIS. MOHAMMED AND ALI IN THE BACKGROUND

THE CREW OF A DESERT FLEET

The men who conduct the caravans have neither horses nor tents. Most of them walk

the entire "voyage" of from six to eleven months each way. Occasionally a caravaneer may mount a lightly burdened camel (if such can be found) or stride some patient, trudging donkey. I once saw one of these little beasts on the way to market supporting a corpulent Arab, a bag of corn, and a live sheep. Now and again the little donkey showed its fatigue and disgust by lying down in the road. Nothing of that nature, though, could disturb the imperturbable son of Allah, who held in place the corn and the sheep and stood astride the ass, forcing it to lift him as it regained its feet.

The horse is used only for riding. Some fine breeds are found among certain tribes of the Tuaregs and others in the extreme south, or are owned by the wealthy Arabs of Barbary. Those seen about the towns and oases are ordinary specimens and are abominably treated The Arab generally uses a cruel bit, goads his horse unmercifully with the sharp corners of his broad, scoop-like stirrups of steel, and has a bad habit of drawing it up sharply out of a full run. He is greatly aided in this feat by the character of the Arab saddle, which is undoubtedly the model from which our Western stock-saddle originated. The horse-riding Tuaregs have a stirrup which in size is the other extreme of that used by the Arabs, it being just large enough to admit the big toe. Those Tuaregs who infest the northern deserts, and the Asgar and Kelowis Tuaregs who control the Tripoli-Sudan routes, use the riding camel.

I have never seen men of a trade caravan carry tents. They wear a heavy woolen outer garment called a "baracan." This answers all their immediate needs in the way of clothing. In its loose folds the native carries anything from his shoes to his coarse staple food, barley bread. At one caravansary I found Mohammed rinsing my dishes in some stagnant water and carefully wiping them on his baracan, which bore all the hallmarks of a family heirloom. In winter the baracan is a protection against the chilling winds, in summer against the intense heat. When the mid-day halt is made, Mohammed casts off the loads from either side of the recumbent camels and with his baracan

MOHAMMED BREWING TEA IN THE DESERT "KITCHEN." MURAICHE IN THE BACKGROUND

constructs an improvised tent, propped up with gun or stick.

ISLES IN A SEA OF SAND

Oases practically determine the courses of the trade routes. The size of an oasis, like that of a caravan, is not a fixed quantity but may vary from a few date-palms around a desert spring to areas over which thousands of these "hermits," as the Arabs call the palms, raise their delicate shafts. The town of Tripoli is in an oasis about a mile wide which stretches its palm fringe five miles along the coast; one oases south of Algeria contains over 280,000 trees, and the oases of Tuat, south of Morocco, cover many square miles of territory. The word oasis originally meant a habitation, which in turn necessarily signified the presence of water, but to-day it has become so modified as to mean any cultivated spot. Oases are practically all inhabited; most of them are the result of man's planting and in many sandy regions a constant warfare must be waged by him against the encroaching sands.

Water may be struck in almost any part of the Sahara and brought to the surface by artesian wells, which are destined to be important factors in its development. The presence of water there is perhaps not difficult to explain. One follows a river, which gradually lessens as the distance from its source increases until it is finally lost — drunk up by the sands. After disappearing, it follows underground courses and with other streams helps to form vast subterranean lakes. Such is the case with many rivers which flow from the southern slopes of the Atlas. These, in all probability, eventually find their way to that vast depression of which the salt-wells of Taodeni are the centre.

IRRIGATION IN THE DESERT

Selecting some satisfactory spot, the Arab digs his well, sets out his palms, and shortly, under their shadows, raises fruits and vegetables. In the cool of the day he hauls water to the well-top in large goatskin buckets, to be automatically spilled into an adjoining cistern. This filled, a gateway is opened through which the sparkling liquid rushes and finally trickles away down the little ground channels by which the garden is irrigated. Camel, cow, donkey, or wife may

LOST IN THE DESERT

be the motive power used to bring the water to the top of the well. This is achieved by hauling the well-rope down the inclined plane of a pit. There was one well I used to visit in the oasis of Tripoli that was tended by an old blind man. Down into the pit he would go with his cow, turn her about, then up again. When something went wrong with the tackle he would lean dangerously out from the slimy well-curb or crawl along the rope-beam over

AN UNINVITED GUEST

Strangers are spied upon by soldiers, under the guise of protection

A 'SHACK' UNDER WHICH WATER, BROUGHT FROM A DISTANCE, WAS KEPT IN STONE JARS

the opening to adjust the rope—no easy feat even for a man who could see.

Outside the town walls and in many oases, markets are held on certain days of the week. On market-days, after breaking their lonely vigils on the far-off pasturages, multitudes troop in from every path, driving their flocks and herds. Here the human streams of brilliantly-garbed Orientals converge, then widen out into a great, confetti-covered lake. Inside the town gates, other shops line the narrow streets into which the sunlight sifts through a rainbow of sand-dust. At these markets town and country meet to trade — Berber, Arab, Turk, Jew, and Ethiopian barter their products while black women, their heads covered with woven plates, haggle and banter over their wares.

On the outskirts of some towns one sometimes happens upon pits twenty feet in depth and as many wide. These are corn-wells, in which corn is stored when famine impends, just as it has been done by these Orientals since time immemorial. Some of the pits near the trail have fallen into disuse for the time being and are dangerous traps on dark nights.

"WE CAMPED NEAR A POOL BY SOME RUSHES"

A NIGHT IN A CARAVANSARY

Many small oases have only a caravansary, a place of rest and protection to caravans from inclement weather and desert marauders. It is usually a rectangular enclosure, having arcades along the sides and open in the centre. There is one entrance protected by heavy doors, which are barred at night. Usually, either town or country caravansaries occur so frequently on the trails that long, forced marches are seldom necessary. About four cents per head is charged for camels and a nominal price for goats and sheep; and green fodder and other supplies may generally be obtained.

One evening I drew rein at the heavy portal of one of these desert caravansaries. The place was literally jammed with the animals and men of two caravans which had arrived before us. For a number of reasons I had objections to spending the night in such close quarters, preferring to risk the external annoyance of thieves. Muraiche, with much suavity, held a lengthy conversation with the keeper, who shifted the little blossom which he wore tucked at the top of his ear to the other side of his head and moved thoughtfully away. Muraiche informed me that he had confided to him that I was the Consul of Cordova and that he had asked permission for us to sleep under the olive trees within the mud-walls of his garden — which was no small favor to be granted to strangers. The keeper was sufficiently impressed with the yarn, spread mats for us under the trees, and later brought us some fruit and eggs.

Well knowing that not one of my men would stay awake during his watch, I slept lightly. Toward midnight the creak of my pannier aroused me. Turning my head cautiously, I distinguished a large wolf-dog in the dim moonlight; under the shadow of a near-by pomegranate tree, I made out the form of a desert thief quietly directing the dog in his plundering. Jumping to my feet and giving Mohammed (whose watch it was) a hearty kick to arouse him, I ran after the retreating marauders, who disappeared among the rushes of a neighboring marsh. Knowing better than to enter the lair, I returned to camp to find Mohammed bemoaning the loss of a pair of broad-soled desert slippers.

Water, of course, is an important feature of caravan trade. Where distances between oases are great, desert wells are sunk at intervals along the trails — and in Tripoli I have seen them faced with a stone curb. It is incumbent on the last traveler who quenches his thirst to cover the well, and failure to do so is the greatest breach of honor and custom. However, careless drivers do leave wells uncovered, and the pursued *will* drink and then destroy the well, for life as well as water is sweet. The next arriving caravan finds the well filled with sand, or the water fetid with the carcass of some dead animal; and, in consequence, perchance another tragedy of the Desert is written on the sands.

In some parts of the Desert, particularly in the country of the Tuaregs, there are many hidden wells known to them alone. These they conceal with a cover of wood, brush, or skins, upon which they again spread the sand. Wells play an important part in desert warfare and the control of a well has more than once been the determining factor in a desert fray, the besiegers being forced to retire for water. In a section of the Gharian Mountains, in Tripoli, I ran across a "shack" under which water was kept in stone jars for the use of passing caravaneers. Among the jars squatted an old parched, country Arab. This man, or some member of his family, voluntarily saw to it that the jars were never empty, although the water had to be brought a long distance by donkey — and this without remuneration. The jars were of ancient design and their pointed ends permitted them to be placed upright in the soft sand. Indoors they are placed in a corner. To wash with water in the Desert would be wilful waste to the Arab, who performs his ablutions there with sand, as his law prescribes. Since, in all lands, riches consist of the possession of that which is the greatest universal need and desire, it is not strange that in some parts of those arid wastes a man's wealth is reckoned by the number of wells that he controls.

THE BURDEN OF THE TRAIL

Fatiguing travel and little sleep, with the relentless sun beating down from above and the everlasting vibrating heat-waves wriggling up from beneath, will in the end try the soul. The very watching of one's men and animals, as step after step they sink ankle-deep into the sand, is wearying. Sometimes it is over naked plains containing nothing upon which the strained and roaming eye can rest; then day after day over rolling dunes of sand, unfolding, ever-unfolding, phantom-like, away from one. Some take on shapes weird and picturesque: here, like fossilized waves of the sea; there, crossing and recrossing each other in endless monotony. Even its grandeur oppresses and one feels as though a heavy curse had settled over this land, from which marvelous fables have arisen on account of the loneliness of its inhabitants.

"THE RIVER-BEDS ARE VERITABLE OVENS OF HEAT"

Watch a light zephyr from the southeast as it playfully picks up and twirls the whiffs of sand-dust. Perhaps it dies down as quietly as it came — perhaps the wind increases and brings the terrific sandstorm in its wake. This terror of caravans may last from a few hours to a week; then, from the yellow, suffocating gloom, the surviving remnant of a caravan emerges, perchance to struggle on over a different country from that which surrounded it when the storm shut down on the landscape. From the level stretches of sand, which vary from thirty to three hundred feet in depth, this wind will pile up dunes a thousand feet high; or, from those standing, it may twirl and

twist out huge pillars or sand-devils — due, say the Arabs, to the caprice of passing demons.

During the irksome monotony of long days of travel, small and insignificant things arouse interest. Here and there a lone sand-lily nods its blossom in the soft wind, and little desert snails hang like racemes of white lily flowers to the under side of the tamarisk bushes and blades of rank desert grass. When with a caravan, the lift and fall of the great, squdging feet of the camels holds one in strange fascination — here turning a black beetle upon its back, there startling a sand-lizard, which scurries from their path. Flick! flick! goes its tail, and the shiny, toy-like thing disappears beneath the sand.

Allah has bestowed upon them turbans instead of diadems, tents instead of walls and houses, given them swords as entrenchments, and poems instead of written laws.

TELEGRAPHING ACROSS THE SAND-DUNES

The Desert as an obstacle to communication has in many cases been greatly exaggerated. However, the numerous bones which strew the trails bear ample evidence that the Desert, like the sea, claims its tribute of lives. Still, it is a practical and much-used highway to its several million inhabitants. The black shepherds of the high steppes of the Adrar region, northwest of the Niger country, cross the Igidi Desert every year with their

A FRENCH OUTPOST IN THE DESERT

"France, with its desert forts and systematic aggrandizement of the sands, will soon be the owner of the Sahara"

Passing caravans always excite curiosity. A dark mass appears on the horizon; it seems to disintegrate as it comes nearer and one soon discerns the great, lumbering camels. It may be a big trade caravan, taking the greater part of the forenoon to pass, during which the caravaneers and your men exchange news. Perhaps it proves to be a caravan of Bedouins who, like the will-o'-the-wisps that they are, sweep by with all their barbaric paraphernalia fluttering and flapping in the gusts of wind. Some of the women are hidden from view by wide-spreading, gaudily-striped palanquins. At night they camp in a sunken spot where grow the spiny cacti and the withered camel-thorn; by daybreak on the morrow they are a speck on the horizon. These Ishmaelites say that flocks, which they sell in the great markets in the oases of Tuat. In like manner, herds of cattle are driven from the south into the region of the Hoggar Tuaregs, and might easily continue north into Algeria if fodder were grown for them in the oases.

Before the advent of the draft-camel into the western Sahara, the ancients tell of a people called the Garamantes who made the long trans-Saharan voyages with burden-bearing cattle, and many inscriptions, rough-hewn on the desert rocks, bear witness to the previous existence of these people.

Already the droning hum of the telegraph wire is heard in French Barbary and through certain sections of the southern and eastern Sahara; and, in Tripoli, even the unprogressive

Turk has stretched a single wire 600 miles south, connecting the sun-baked town of Murzuk with the outer world. France, with its desert forts and systematic aggrandizement of the sands, will soon be the owner of the Sahara. Perhaps the day is not far distant when one may purchase a railroad ticket from Tangier to Timbuktu.

THE GRANARY OF AN ANCIENT EMPIRE

The central part of the Desert does not seem to have any great intrinsic value, although the high steppes between the Sahara and the Sudan could be converted into pasturages with a distinctly economic value. Such use is made of the plateau-lands of northern Tripoli and southern Tunisia and Algeria. Tunisia has but a million and a half inhabitants; under the Cæsars it supported a population of twenty millions and still had enough cereals to stock Rome, acquiring with Algeria and Tripoli the proud distinction of being the granary of the Roman Empire. A few miles back in the mountains, the crumbling remnants of huge, ancient coffer-dams tell the tale of a region whose plains, centuries ago, were waving grain-fields and whose mountainsides and valleys were verdant with the vine and olive tree. There seems good reason to believe that the fertile, tropical vegetation of the Sudan is encroaching on the Sahara. Thus empires depart, races dissolve, and religions change — but the great work of the Almighty on the eternal hills and the trackless sands goes on.

NIGHTFALL ON THE DESERT

Night everywhere transforms the commonplace into the beautiful, but night on the desert bewitches the imagination and allows all of the romance and vague fancy of one's nature to run riot. Go out after the dews have chilled the air and stand alone on the moonlit billows; hold communion with those mighty impulses which seem to issue from its sands; sound the fathomless depths of that dark-blue African sky, resplendent with its million glittering stars; let your eye wander on and on over the undulating hillocks, ever rolling away to the horizon of the imagination until the mysterious spirits of the desert are rising dark and ghost-like out of the shades of the dunes. Then find your way back to your rug—spread, perchance, under the branches of some gnarled old olive — and fall asleep, to wander among the enchanted chambers of some Ali Baba, through the mysterious mazes of a thousand and one nights.

A BULWARK AGAINST PANIC

HOW A PROPERLY GUARDED SAVINGS-BANK SYSTEM IN NEW YORK WEATHERED THE STORM — THE NEED OF SAVINGS-BANK LAWS IN OTHER STATES

BY

C. M. KEYS

A REPORTER sat in the office of the president of one of the big New York savings-banks, talking about the bond market. A young man came in, whispered a few words to the president, and was answered briefly: "Show her in." The reporter rose to go.

"Wait," said the president, "I want you to see a savings-bank at work."

An old woman slipped through the door, which swung behind her. She bowed profoundly. The reporter noted at a glance the woollen shawl, the old battered bonnet, the big, rough shoes, the broad, red hands.

"A scrubwoman," he thought.

"Good morning," said the president. "Is there anything you would like to ask me?"

"It's about me money, sir," she said, glancing uneasily at the reporter.

"What is it?"

"I have about a thousand dollars in th' bank, an' I wants the half iv it," she said, "f'r an invistment. He wudn't gimme it unliss ye says so."

"What kind of an investment is it that you want to make?" asked the president.

She named a new mining company, floated

by Philadelphia men to re-open an alleged Aztec mine.

"A man wint down our strate, an' told us all about it. I wants t' put foive hundred dollars in. He sez, sez he, as t' will be tin thousand in a year, an' mebbe fifty thousand in tin years."

"Can you afford to lose that money? How did you get so much?"

"Sure, I 'arned it, sir, all iv it, wid me hands, an' on me knees. It tuk me twinty years. I can't afford t' lose none of it!"

"This mine, let me tell you, is a gambling concern. The men who are trying to sell stock to you have no reputations to lose. They merely want your money. They will promise you anything. You will never get it. I know all about them and what they are doing. Now, if a stranger came along to you and wanted half of your money to bet on the races, in the saloons, would you lend it to him?"

"I wud not!" That, at least, was positive.

"But you want to give your money to this stranger to take to Mexico, where you can't reach him, and sink it in a hole in the ground, where it will almost surely be lost forever, to you, at least. Do you think that is wise?"

"Sure, I don't," she said. "An' it's much obliged I am t' ye f'r y'r advice. I guess the likes iv me shudn't have anny money!"

She came over to the big desk, forgetting her first shyness, and impulsively wrung the president's hand. Then she turned and went out with a hasty "Beg y'r pardon, sir."

"You will see," said the president to the reporter, "that a savings-bank is a sort of nurse to these financial babes. The people who have a few hundred dollars in the bank are the natural prey of the sharpers. One has to be all eyes. The mining-sharps are pretty bad, but the real-estate sharps, who want to sell a poor woman two or three beautiful lots on the edge of some Long Island swamp, are the worst. We have more of them on the East Side than of any other vermin."

From that day to this the reporter, who is the writer of this article, has looked at savings-banks through different eyes. Formerly they appeared to be merely business institutions, gathering together the funds of the people, investing them wisely within the leash of the savings-bank law, but straining constantly at that leash. They seemed to be wise, keen, eager collectors of the people's money. They seemed to grow rich and powerful.

Months of quiet study that followed the incident of the Irish scrubwoman and the president convinced me that, in New York City, at least, there is a great group of strong, rich, influential savings-banks, officered by men keen enough to avoid all traps, who give the best of their brains and energy to just the kind of work that the reporter saw that morning on the East Side. A savings-bank has come to be considered not so much a business institution as a philanthropy. It is a safe haven. Its president, to fill his position well, must be the never-failing lighthouse on the reefs outside.

GUARDING THE POOR MAN'S MONEY

It was my pleasure to know two men who stood at the head of the list in New York. One, the late John Harsen Rhoades, president of the Greenwich Savings Bank, spent the best efforts of his old age in making a strong fight against the admission of new and untried bonds to the list of investments legal for New York savings-banks. In the midst of his losing fight against the new Rock Island refunding bonds, three years ago, I talked with him about the business of the savings-banks. He was slightly disheartened. He saw the end of the fight.

"The time may come," he said, "when the financial powers will be able to use the funds of the savings-banks for their own purposes, to load them with worthless bonds, or at least with bonds far weaker than they are allowed to buy to-day. They made a beginning when Mr. Roosevelt, as Governor, signed the bill that let the Chicago and Alton bonds in. This Rock Island business is the second step. I don't know what the next may be. I only hope that I shall not live to see the day when the Wall Street powers may ride the savings-banks as to-day they ride so many of the national banks and trust companies!"

In New York that time has not yet come. To-day it looks as though it would never come. Mr. Rhoades died more than a year ago, but his traditions still live and are general throughout the ranks of the savings-bank officers of the city.

A savings-bank should be an institution devoted to the keeping of the funds of the "little people," to the payment of proper interest on those funds, and to the maintenance of the most absolute safeguards conceivable

around about those funds. The whole object of the savings-bank should be the securing of perfect safety, and it should pay interest only as high as is compatible with that safety.

The object of a commercial bank, on the other hand, is, or should be, to give to its depositors, who are also its customers, the best possible facilities for turning their credit into cash or working capital. Safety is desirable, but the main characteristic of a really successful commercial bank is that it gives to its customers exactly the amount of credit to which they are entitled. That, itself, means safety. The man who deposits $1,000 in a commercial bank does not want interest at the rate of $35 or $40 a year. He wants to have, say, $4,000 of credit; that is, to be able to borrow that amount from the bank on his note, or on the notes of his customers, or on some other form of commercial paper. He will get his return in the money he can make that $4,000 earn during the time he has it from the bank.

The two institutions are vitally different. The commercial bank is purely a business affair; the savings-bank is a philanthropy. The commercial bank must keep its cash in a liquid form, that is, invested in loans and in other ways that keep the stream of cash steadily flowing in and out: the savings-bank may find out just what proportion of its funds remains permanently on deposit, and may invest that amount in long-term bonds, or mortgages, or any other fixed form of debt. Clearly, the people who put funds into a commercial bank put them there just as they put money into their business, to get advantages large or small, according to the character of the business season; but the savings depositor puts away his funds for safe-keeping, as one might hide his money in a chest or stocking for an anchor to windward when the storms blow.

The glory of the older states of the Union is that they have come to recognize this fundamental difference and to embody it in their laws. The shame of the newer states is that to-day there are no laws on their statute books that establish extra safeguards about the funds of the "little people," the blind, the unlettered, the poor, the ignorant—the people who cannot see for themselves but must be guided and guarded by the law.

New York and Massachusetts have excellent laws to govern the savings-banks. Connecticut, New Hampshire, Minnesota, Michigan, Maine, New Jersey, Wisconsin have fair laws. From that small list, the record of intelligent guidance in the investment of such funds dwindles down to nothing. And that "nothing" measures the laws that exist in two-thirds of the states of this Union.

THE WELL-DRAWN NEW YORK LAW

To make clear to what lengths the regulation of such investment should go, the law of New York state is summarized briefly in the following paragraphs. Small technical distinctions are omitted, only the broad lines of the law being noted. New York savings-banks may invest their deposits:

1. In the bonds of the United States and of New York state.
2. In the bonds of other states that have not defaulted within ten years.
3. In municipal bonds of New York state municipalities.
4. In the bonds of any city in a state admitted to statehood prior to 1896 and which has not defaulted on any of its bonds since 1861. The debt of such city, however, must not exceed 7 per cent. of its assessed valuation.
5. In first mortgages on real estate in New York state. Such mortgages must not exceed 60 per cent. of the value of improved property, nor 40 per cent. of the value of unimproved property.
6. In first-mortgage bonds of strong railroads which have paid, for at least five years, dividends at the rate of 4 per cent. on their stocks, but the stocks must be at least equal in amount to one-third of the debt of the road.
7. In the first-mortgage bonds of railroads in New York, on the same conditions. Not more than 25 per cent. of the deposits shall be invested in railroad bonds, and not more than 10 per cent. in the bonds of any one road.
8. Cash, to the extent of 10 per cent. of the total deposits, may be kept on hand, or on deposit with state or national banks, or trust companies.
9. The trustees may loan this cash if they prefer, on collateral, but the collateral must consist of such bonds as are enumerated in sections 1 to 7, above, and the loan must not exceed $90 to every $100 of collateral, at its market value. If the securities decline, the savings-bank must demand the payment of the loan or the increasing of the security.

This is a very strict law. The layman can perhaps better understand its strictness through the enumeration of a few things that the savings-bank *cannot* do.

1. It cannot loan money on notes, drafts,

bills of exchange, nor on any personal securities whatever.

2. It cannot buy stocks of any kind whatever.

3. It cannot buy any bonds, nor other securities, of any industrial, manufacturing, or street-railway company.

4. It cannot buy or loan money on farm lands, nor on mortgages outside of New York state.

5. It cannot buy any bonds that are not first-mortgage, in whole or in part. Even such strong bonds as the New York Central or Lake Shore debentures, or collateral trust bonds, cannot be bought.

6. It cannot buy any real estate bond nor mortgage except after a full and complete examination of the property by a committee of its trustees.

Now, if someone tells you that the "pirates of finance" have borrowed the money of the "little people" to finance speculations in Wall Street, or to help float some fantastic holding company, some steamship combine, some great industrial trust, you may answer him and say:

"Not in New York state: there is not in the savings-banks of this state one single dollar's worth of any man's notes, nor one single dollar's worth of any 'trust' securities, nor one single dollar's worth of any holding-company's bonds, nor one single dollar's worth of any stock, even the best."

You will not be far wrong. It is true that in 1900 the banks were persuaded to buy some Chicago and Alton 3 per cent. bonds; but it is also indubitably true that those bonds will always pay their interest, and be paid in full when they mature. It was a rift, but it was a small one. Moreover, the rift has not widened, but rather closed. For a large majority of the savings-banks did not buy the bonds, and of those that did, many have sold them.

"But," another man may say, "if the savings-banks can loan money to the trust companies, or state banks, and the Wall Street people may borrow from them, is that not the same thing as to loan the money direct?"

It is not, because the law provides that when a savings-bank deposits money in a trust company or state bank, the savings-bank is a "preferred" depositor; that is, that in case of failure or suspension, the savings-bank has the first claim on the assets of the trust company or state bank, coming ahead of all the general depositors. The only other depositors preferred are people who put funds into the trust company as guardians, executors, administrators, receivers, trustees, committee, or depositary, or, occasionally, the state treasurer or city treasurer, whose deposits may be specially secured by pledge of some of the bank assets. These are small items in relation to the whole deposit account.

To illustrate, the Knickerbocker Trust Co., of New York, had, on August 22, 1907, $63,000,000 of all classes of deposits. Of this, it owed the savings-banks $1,103,700. All of its other preferred deposits amounted to about $500,000. It will be seen immediately that the preferred deposits are relatively small. It might be added that when the trust company closed its doors, in October, the savings-banks had practically the first claim on it for money. The savings-bank money was about as safe as it could be made by human ingenuity.

THE SAVINGS-BANKS IN THE PANIC

Let us look at the result of all this safeguarding of the people's money. There was a panic in New York which lasted, roughly, from October 23rd to November 15, 1907, with more or less fright and uncertainty running on into December. It was a period of runs on banks. When runs begin, or in fact at any time, the savings-bank is entitled to refuse to pay depositors in cash except after a sixty-day notice. This rule was enforced in October. Thousands of frightened people gave the sixty-day notice. Most of these notices expired in the last two weeks of December. It might have been expected that the runs would then resume.

They did not resume. Before the sixty-day period was up, most of the banks announced that they would pay without waiting for the expiration of the time. A few hundred people took their money out. Most of these went and put it into another bank. Some of the others merely rescinded their notices. Others drew out small amounts. There was hardly a single trace of panic in and around the savings-banks during the last two weeks of the old year. Conservative authorities have estimated, in the lack of actual figures, that the net decrease in savings-bank deposits in New York City between October and January was less than $8,000,000.

Now, one may ask where the savings-banks got the money to pay out that $8,000,000 over and above the money they received. By way of a reply, I have made a brief summary of the amount of cash owned by the savings-

banks, and on deposit in the thirty-six chief trust companies of the city, as of August 22nd, and as of December 19, 1907. It answers the question:

	In Trust Companies
Savings-bank deposits, August . .	$27,000,000
Savings-bank deposits, December .	18,400,000
Withdrawals	$8,600,000

In other words, the savings-banks of New York City — if it be true that the decrease in deposits was less than $9,000,000, as estimated — paid their losses by taking their money out of the trust companies, without reckoning the amount that they may have withdrawn also from state and national banks. They did not have to sell bonds nor close out mortgages. Practically, the savings-banks of New York met and conquered the worst panic since 1893 right out of the till, as a merchant might pay for a newspaper or a cigar.

What is more to the point, perhaps, is the fact that when the savings-banks gave their notices it created no additional panic, caused no additional runs. The people had come to know, through long years of experience, that their savings-banks would pay, that they were sound, solid, unbreakable. The torrent of panic was dammed and stayed against the solid dyke built up through years of administration under a sound savings-bank law.

The reverse of the picture may be taken from the records of the New Hampshire banking commissioners covering the panic of 1893. That state had, for a generation, been piling up funds in its savings-banks. They had been considered sound. But there was no adequate law to limit their investments. Many of them owned great amounts of railroad, industrial, and holding-company stocks. Most of them were burdened with huge amounts of Western farm-mortgages, bought without due inspection. As the lands fell in value, and as the thousands of Western investment companies failed, and the Western railroads one by one fell into the hands of receivers, down went the banks. Here was no six-weeks' panic. The state lay in misery for four long years. In one year, 1896, eleven of the banks ceased payment. The little accumulations of rugged lifetimes were swept away in the flood of ruin. In thousands of little homes, Poverty became an abiding guest.

Out of the chaos, New Hampshire built a savings-bank law worthy of the name. The first foundations were laid in 1890. The superstructure is yet in the building. Session by session, haltingly at times, the early faults are cut away, the early omissions are rectified. In time, doubtless, the state will take its place alongside of New York and Massachusetts, at the head of the list.

THE TWO KINDS OF SAVINGS-BANKS

There are two classes of savings-banks in this country. One class, known as mutual banks, is common throughout the New England and the Eastern States. Minnesota had fourteen such banks at the date of the last published report of the Government. A few are scattered over Wisconsin, Ohio, and Indiana. These banks have no capital stock. They are formed by the request of a few people —at least thirteen, in the case of New York— who, having obtained authority from the state and the county, buy or lease a building and start the bank going by putting in their deposits and announcing that they will receive public deposits. These men are known as "trustees," and receive no salaries as such.

This body of trustees is a perpetual body, except when vacancies occur either through death, through removal from the state, or through continued absence from the meetings for a six months' period. In such cases, the other trustees fill the vacancy by election. A trustee may receive a salary, in case he is appointed to do some active work, as an appraiser, clerk, or in any other capacity that requires constant attendance. Trustees cannot borrow from the bank, nor be surety for any borrower.

Throughout the West and South, the stock savings-bank predominates; in fact, almost monopolizes the field. It is organized very much like a state bank or trust company. It pays interest to its depositors and uses a part of its surplus each year, when there is one, in dividends to its stockholders. A controversy is always in progress between the advocates of the mutual and the stock banks. The strongest argument for the stock bank is that at the outset, when the bank is new, the depositors have an extra security for their savings, because, if the bank should fail, the stockholders can be assessed to the full value of their stock, in addition to the safety fund made by the original payment of the stock. On the other hand, the mutual bank, once

established on a solid basis, can pay and does pay larger interest to depositors, as both deposits and its surplus are earning money solely for the depositors. Without going into the interminable controversy at length, it seems established that the mutual bank is more fitted to the older and better developed states, while the stock bank, on account of its greater initial security to depositors, seems better adapted to the newer states, where the chance of loss through local mortgages and bonds is greater.

The whole savings-bank system, consisting of about 1,320 banks in all states, had gathered together resources that aggregated $3,580,000,000 when the Government compiled the full report for 1906. The figure is approximate, because very few of the banks made their reports for exactly the same date. Yet, it is pretty close to the actual figure.

It means that these banks hold resources that, if distributed, would give to every citizen of the country nearly $43 in currency. If one reckon only the actual deposits to be distributed, and not the value of the buildings, etc., the position of the United States in respect to other leading countries may be indicated, with fair accuracy, in this table:

Country	Savings per Inhabitant
Denmark	$81
Switzerland	62
New Zealand	54
Prussia (alone)	50
All Germany	45
Australia	44
Norway	44
United States	41
Austria	37
Sweden	32
United Kingdom	23

Too much reliance cannot be placed on the comparative figures, because the returns are not compiled in exactly the same way. For instance, Denmark, which leads, reports $205,000,000 of savings. Close analysis shows that about $45,000,000 of this amount is savings deposits in other banks. The figures for the United States, and for most other countries in the list, do not include even the savings deposits in such institutions as the Illinois Trust and Savings Bank of Chicago, the Mississippi Valley Trust Co. of St. Louis, or the Cleveland Trust and Savings Company. Even with this deduction, however, Denmark would still lead with about $64 of real savings deposits in savings-banks per inhabitant.

The comparison takes on a new and rather significant meaning when one studies the savings in the various states of the Union. Probably the tabular form will show the facts more clearly than they could be shown in any other way. The table gives the savings resources per inhabitant in the states named:

State	Savings
Connecticut	$242
Massachusetts	229
New Hampshire	190
California	183
New York	178
Vermont	162
Rhode Island	145
Maryland	59
Iowa	56
Delaware	48
New Jersey	44

These are the states where the practice of saving money through the savings-banks has reached a high state of development. Illinois, Ohio, and Missouri have large savings piled up in commercial banks and trust companies, but these may hardly be considered as purely savings-bank accounts. Here and there one may find national and state banks with "savings departments," but comparatively they do not amount to much outside of the three states named above.

California, which stands fourth in the list above, has compiled its mass of savings under the adverse circumstances of crude and inefficient laws and lax methods of banking, both in the commercial and the savings field. Revision is now to be expected, for after the truly remarkable and scandalous failure of the California Safe Deposit and Trust Company, in October last, public opinion is squarely behind the movement in this direction. The State Banking Commissioners themselves, early in the summer of 1907, filed a report to the effect that the laws were defective, and that savings-banks were dabbling in commercial business and commercial banks in savings business.

That there is plenty of room for reform, may be judged from the startling fact that in twenty-five or more states there are no institutions devoted purely to savings, and guarded by adequate laws. In such states men may save their dollar or two at a time, but, as a rule, only by hoarding it, or by placing it in commercial or private banks—exposing their savings to risks that they should not properly run. It will be found that the states provided with adequate savings-banks

and savings-bank laws are shunned by the army of "private bankers," so-called, and that in these states this chief danger to the small depositor is minimized.

In the term "private banker," as used by the United States Government, the brokers and investment bankers of the great financial centres are not included. The report for 1906 shows only six private bankers in New York, and none in Massachusetts, Connecticut, New Hampshire, Rhode Island, Vermont, or New Jersey. In Minnesota, the Western state of all others where savings-banks thrive, there are thirty-nine. This would seem to constitute an exception to the general rule. It is brought into line, however, by the fact that a law goes into effect in that state on April 1, 1908, abolishing private banking and prohibiting advertising by any so-called bank that is not under the supervision of the public examiner. Similar laws are being debated for Michigan and West Virginia. The West and the South are awake to the dangers of loose banking, and will stop it.

Iowa, in many respects a very enlightened state, was content until very recently with banking laws which so restricted and hampered the chartered banks that a host of private bankers found the state a rich and profitable field for operation. Savings-banks and trust companies alike found slow and most laborious growth in the state. More than 450 private bankers flourished — a greater number than in any other state except New York and Illinois, and greater even than in these, if one exclude the purely investment bankers. That Iowa is to-day awakening to the danger of laxity may be inferred from the fact that the state auditor has, in his recent reports, clearly pointed out the imperative need of banking revision.

If every state had on its statute-books savings-bank laws as good as the laws of New York or Massachusetts, or even of New Hampshire, Maine, or Connecticut, there would be no crying need of the postal-savings innovation. Because, even in New York, more than half of the counties have no savings-banks; and because, in most of the Western and Southern States, there are neither sufficient banks nor adequate laws to safeguard them, the postal savings-bank is likely to prove a national blessing. It has many drawbacks, chief among them the fact that it takes funds away from the community in which they are earned; and the other fact that the Government has not shown itself capable of administering a bank of any sort. Yet, there is no good reason why it should not flourish. Nor is there any good reason why it should not be a constant feeder to the trustee banks in the well-guarded states, just as it is in England to the trustee banks, in Belgium and Italy to the coöperative savings-banks, and in France to the private savings-banks.

WHY THE POSTAL BANKS ARE MOOTED

This postal idea was first mooted in England in 1807, as a cure for the weakness of the private savings-banks. It was not put into effect until May, 1861. It grew rapidly. At the beginning of the present century, one out of every 5.29 of the citizens of Great Britain had an account in the postal banks. As time went on, the people were allowed to purchase Government annuities and life insurance through the postal banks. The British savings-banks also act as agents for their depositors in the purchase and sale of Government stocks and bonds. These are refinements of the savings-bank system which seem foreign to our traditions, except, possibly, in the case of Massachusetts, where the scheme of savings-bank life insurance finds many able advocates.

In Pennsylvania and Ohio, particularly, and in most other states to a greater or less degree, there flourishes a form of savings institution closely akin to the coöperative savings-banks of Germany, Belgium, and Italy. This is the building and loan association. The latest report in my hands shows that there are more than 1,800,000 depositors in these companies, controlling assets valued at more than $700,000,000. Pennsylvania leads the list with 330,000 members and assets of $128,000,000. Ohio is a fair second. These institutions have been in vogue since 1840, and have flourished mostly in communities where German ideas prevail. Cincinnati, for instance, had more than 370 of them in 1893, but lost many in the panic years.

For their original purpose, these companies are excellently designed; and they have, as a class, been fortunate in their records and their management. The one proper criticism of them, as institutions for savings, lies in the fact that their fortunes ebb and flow very often with the tide of real-estate speculation. If some railroad, or some great industrial,

is lost to a town whose life was dependent upon it, the loss falls heavily upon the building and loan association, as well as upon the business men and the workers of the place. Thus, the element of protection is minimized in such cases, because the very catastrophe against which savings are supposed to guard—namely, the loss of labor or the income of labor—is apt at the same time to cripple the savings institution.

Also, when new cities or towns spring up, or when the rapid settlement of a community takes place, disastrous competition is apt to arise between rival associations, leading to excessive liberality to members, and entailing all the dangers that arise from excessive competition between banks. The history of the associations of Cincinnati, noted above, might be cited as a case in point.

I do not believe that the building and loan association, or the home-building company, usually called "coöperative," or the real-estate mortgage company, or any other phase of the real-estate investment proposition can take the place of the genuine savings-bank without sacrificing some of the important elements of savings-bank deposit. Nor does life insurance, in any of its phases, fill the requirements of such deposit.

This subject has been covered merely in outline. The laws of every state in the country, and the banks that do business under those laws, are the proper subject of the most painstaking investigation by every citizen of every state. There is no perfect law. Even in New York, as I write, the superintendent has been called upon to decide a knotty question, whether the declaring of a stock dividend by the Missouri Pacific does not take the bonds of that road out of the list of bonds that the savings-banks may buy. The law is not clear. The same remark applies to Connecticut on the same point, and to New Jersey, Wisconsin, and other states.

GREAT CHANGES IMPENDING IN CHINA

EVENTS WHICH SHOW THE INCREASING STRENGTH OF THE IMPERIAL GOVERNMENT AND THE ADVANCE OF WESTERN PROGRESS

BY

Dr. W. A. P. MARTIN

THE DISTINGUISHED AMERICAN MISSIONARY AND TEACHER WHO IS A MANDARIN AND WHO DURING HIS FIFTY-EIGHT YEARS IN CHINA HAS BEEN PRESIDENT OF THE COLLEGE OF DIPLOMACY, THE IMPERIAL UNIVERSITY, AND THE UNIVERSITY OF WUCHANG

IS THERE really a new régime in this changeless empire? Is China striving to fit itself for a place in the comity of nations, or are its vaunted reforms to be set down as a policy of prose and pretension? This question meets us in the public prints of all the nations of the West — so incredible does it appear that an ancient empire like China should break with its venerable past and seek to assimilate the elements of our modern civilization.

The Editors of THE WORLD'S WORK have thought fit to refer it to me as a spectator in front of the scene and familiar with the course of events that have led up to the present situation. Perhaps, too, they have wished to give me an opportunity to confirm or modify the views set forth in my book on "The Awakening of China."

In general my critics have shown themselves sympathetic and appreciative; and if they have taken exception to anything, it is to what they regard as an exaggerated optimism. As the London *Times* expressed it, "While requiring some more tangible proof before we are convinced that China's regeneration is at the door, we gladly admit that there are hopeful signs which go far to explain, if they do not satisfy, Dr. Martin's optimism."

Now, the months that have elapsed since the completion of my manuscript have in my opinion brought forth not a few of the tangible proofs asked for by the *Times*.

THE GROWING STRENGTH OF THE CHINESE GOVERNMENT

From the dawn of treaty relations there has been no more serious source of trouble than

the inability of the central power in China to enforce obedience to its decrees. Not only were distant regions, like Turkestan and Kansuh, dropping off and setting up for themselves; the main body appeared to be in danger of perishing from heart-failure. So feeble was the cohesion that, even in the more accessible provinces, the viceroys, if they did not defy interference, were wont to assert a semi-sovereignty and to make their jurisdiction on *imperium in imperio*.

Not only was this the case at the beginning of the Arrow War between England and China in 1857, a war which reminds us of the state of things in Persia when it was possible for the younger Cyrus to march against the King under pretense of attacking a neighboring satrap. So slight was the impression made on the empire as a whole by hostilities in one section that, in 1857, peaceful intercourse was maintained at all of the other open ports notwithstanding the occupation of Canton by British forces.

More recent, if not more in point, is the action of the southern viceroys in disobeying a decree of 1900 which required them to massacre all foreigners found in their respective territories. Their insubordination was the salvation of their country; but it exposed the helpless weakness and deplorable barbarism of the power to which they owed allegiance.

Mark, now, how the Throne has handled these viceroys during the past year.

The aged Chang Chitung, who hates Peking and desired nothing better than to be left on the Lake Provinces, which he had done so much to develop, is summoned to the capitol. He lingers long and makes excuses, but no excuse is of any avail; torn up by the roots, he is planted here in Peking in the shadow of the Throne. Still more significant is the case of the Chili viceroy, Yuenshik'ai, who to the advantage of position adds the power that comes from knowledge. He it was that led the way in all sorts of administrative reforms. He had raised a formidable army and, as the part played by him in the *coup d'état* of 1898 was supposed to have forfeited the favor of the Emperor, it was hinted that he was training his troops for use in another *coup d'état* which could not be long deferred. He, too, after long delays and many conferences, has been uprooted and planted alongside of his southern compeers. The Government is pursuing a policy, in spite of the opposition of these famous viceroys, which allows none of its creatures to become sufficiently powerful to give umbrage or uneasiness. The new forces of steam and electricity have made this possible.

Steam enables it to bring the troops of one section to hold in check those of another; the telegraph has brought the viceregal courts under the eye of the Throne as never before. The provincial authorities had been the first to make this use of the telegraph. The facility of communication betrayed them into a habit of reporting everything, and ascertaining the Imperial pleasure in advance, instead of running the risk of reprimand or punishment. Thus, renouncing their semi-independence, they became powerless in the grasp of the Central Government.

THE NEW SPIRIT

China has profited by painful experience, and there is no room for anxiety as to the tendency of its present policy. It seems to have prudence on the prow and patriots at the helm. The facility with which the ex-viceroys were transferred to posts of innocuous dignity is a display of new strength, and the use which the Government makes of them bears witness to a new spirit. For these men of light and learning are neither dismissed in disgrace nor sent as were the colleagues of Burlingame to shed their light on Turks and Mongols. They are installed at court as honored advisers. They hold daily conferences with the Emperor and the Dowager in which far-reaching measures are proposed and discussed. Not only have they the satisfaction of seeing their progressive policy carried forward at their old posts by men of their own nomination; they also find it easy to embody their views in Imperial decrees, obligatory on all of the provinces. This reconciles them to their altered position, for a trusted adviser of the Throne is, as they know, mightier by far than a sectional administrator. What more hopeful sign could be found to convince us that the Government intends to carry out a policy of reforms on an imperial scale?

THE NEW COMMISSION

Among the first fruits of their advices is the despatch of three princes to study the art of government at the capitols of the leading

nations of the world. True, they have not had time to digest the recommendations of the five commissioners who returned last year, one of whom has just published a report of his observations in a hundred and twenty volumes — a library in itself. They united in recommending the adoption of a constitutional government. That document, when it comes, will not, of course, be a copy of that which forms the bed-rock of our republic, but something akin to those of Great Britain and Germany, which aim to harmonize the popular will with hereditary privilege. The heir-apparent is not yet named. Perhaps the Empress-Dowager is waiting to choose the most intelligent of these princely travelers as successor to the throne of Kwangsu!

THE GROWING FRIENDLINESS OF OFFICIALS

A changed feeling among Chinese officials toward foreigners was strikingly shown at the meeting of the Centenary Missionary Conference, in Shanghai, last May. Five viceroys sent greetings, and one within whose district we were assembled despatched a high official to represent him. Seven years ago, these missionaries were hunted, ostracized, and martyred; now, they are complimented and encouraged by the highest mandarins in the Empire as engaged in a work full of hope for the future of China. The conference drew up two memorials to the Chinese Government which it was made my duty to propose for presentation to the Throne. At my request they were handed to the Board of Foreign Affairs by the British, German, and American Ministers under cover of a joint despatch and, a few days ago, I received through the United States Legation a reply in these words:

"We have the honor to acknowledge receipt of the despatch, in which were enclosed, on behalf of the Chinese Centenary Missionary Conference, two memorials containing an exposition of the aim of missions, and a plea that religious liberty be extended to Chinese Christians. We noted that this conference represented all the missions in China; that the main purport of the memorials was that missions are of a non-political character. We now have the honor to state that all have memorialized the Throne in the matter."

(Signed) NATUNG.
YUENSHIK'AI.
LIENFANG.
LIANG TUNYEN."

The second of these names will be recognized as that of an ex-viceroy. The third is that of an old student of mine who was trained in the College of Diplomacy. The prompt and courteous transmission of such documents is not the least significant indication of a change of sentiment. No reply from the Throne is expected, but it is believed that the memorials will not be without effect.

During a trip to Manchuria, from which I have just returned, I have observed many pleasing proofs of this change of sentiment. I was invited to assist at the opening of a new Scotch Presbyterian church in the old capital of the Manchus. I called with Mr. Webster, one of the senior missionaries, on Tangshaoyi, who is now governor of that province. Few men have risen more rapidly, and it is pleasing to recall that he spent several years at Columbia University, New York. That he is not going back on his Western training, I had evidence in the fact that in my hearing he engaged the accomplished daughter of my host to give his daughter lessons in music. He it was who obtained from Great Britain a recognition of China's sovereignty in Tibet, and he is now in Mukden to defend China's rights against the Japanese. The following day, many of the city mandarins were assembled at an entertainment given in the church by the native pastor and native members. The governor was represented by an official of high grade (a former student of mine), who made an address of congratulation. The prefect of the city was also present and made a speech. He said that although he had never been under my direct instructions, he had followed them at a distance, and he described his first intellectual awakening to my book on Christian psychology, in consequence of which he said that he would enroll himself among my disciples.

At Newchwang, the seaport, on my way home, I was called to address a large meeting in a Chinese theatre — the highest official of the city occupying the chair and the students of a commercial college forming part of the audience. The principal, a highly refined scholar of Hangchow, made a speech full of the spirit of reform. I had spoken to them on that subject, pointing out to them the marvels of science and not forgetting to attribute the renovation of the great nations of the West to Him who is the Light of the World.

THE ANTI-OPIUM MOVEMENT

Startled by the sweeping condemnation of a vice which has long been sapping the

physical and moral stamina of the Chinese people, incredulous observers have been looking for the Government to relax its efforts to shake off the incubus. Now and then we see reports from a city or district to the effect that in that quarter the prohibitory decrees are a dead-letter. That, however, proves nothing but the difficulty of the undertaking. Corrupt officials are bribed to wink at the trade and the vice; but the higher officials appear to be patriotic and faithful. The opium dens in Tientsin, Shanghai, and Canton have been closed. Men are seen parading the streets with a wooden collar inscribed with their crime of dallying with the opium pipe; and every day gives signs that the people, as well as the Government, consider themselves as engaged in a campaign in which defeat means ruin, social and political. Troy was not destroyed until the tenth year of the siege, nor is it to be expected that the opium curse will be extirpated before the expiration of the decade assigned for the accomplishment of the herculean task. Suffice it to say that none are better satisfied with the progress made in this direction than the members of the Anti-opium Society, who have been exerting themselves for many years to draw the attention of the Government to the magnitude of the evil.

EDUCATIONAL PROGRESS

From the standpoint of all China, nothing more revolutionary than the change of basis in the schools of the empire could be conceived. Instead of the old studies, theoretical and applied science supplies the subjects for competitive examination. The students do not complain much, so long as they are allowed to compete in some way for honors and office. As an evidence of the way in which they are accommodating themselves to the new conditions, I may mention that, as I was going South last May, I met on the train a young man who was one of a hundred who had been newly decorated with the button of M. A., or the second degree, in the halls of Peking. Ten thousand had entered the lists and only 1 per cent. had been allowed to bear off the coveted prize. The multiplication of schools goes on, stimulated by the repeated declarations that the people without education will not be fit for a parliamentary government. Some prominent officials are specially employing their time and influence in establishing schools for girls — convinced that there cannot be light in the household as long as the mothers are left in darkness. The crippled feet of China's women are an image of their mental state; and it ought to be taken as a happy omen for the future that their emancipation is going on at both extremities.

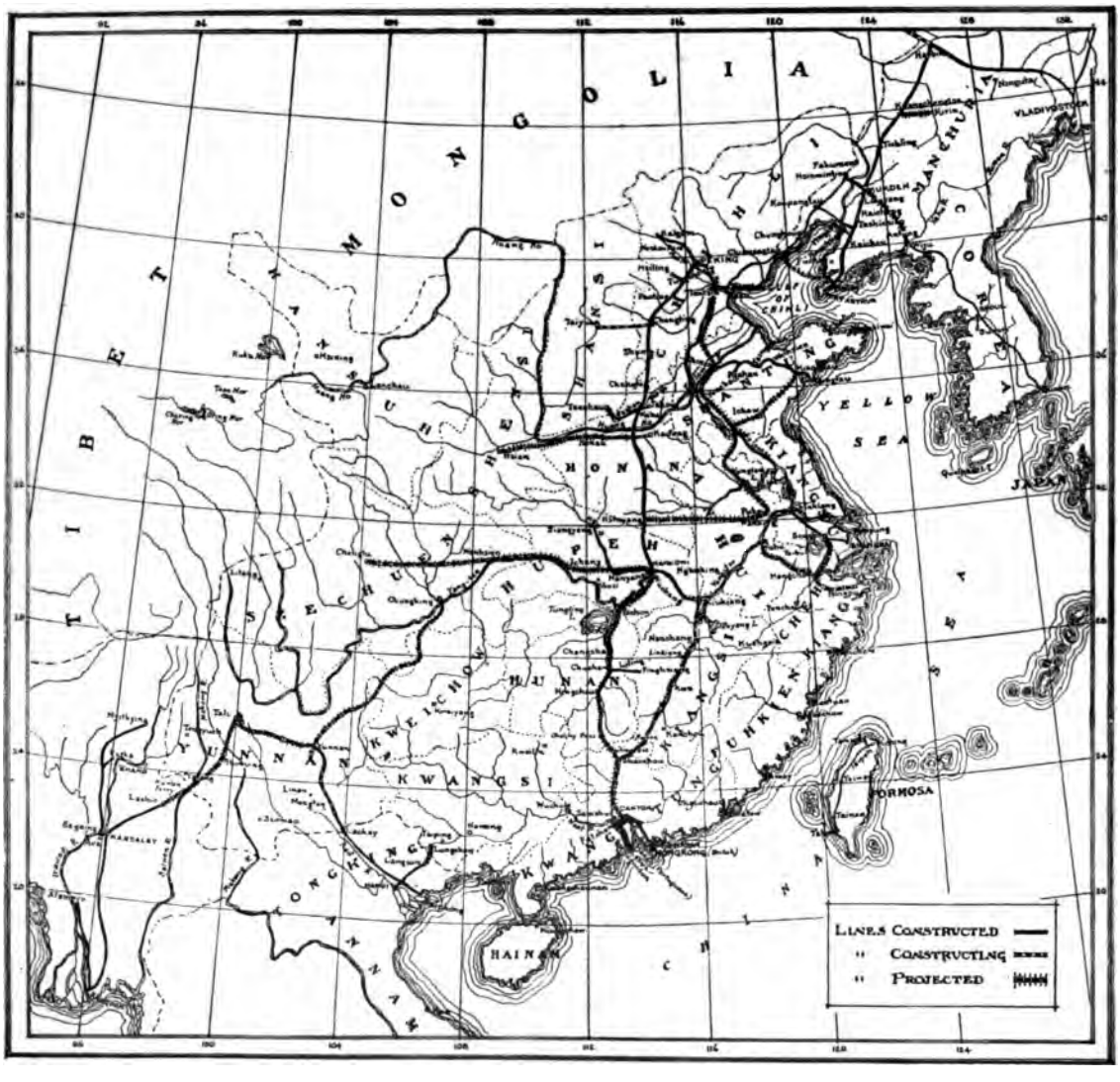
STUDENTS SENT TO THE UNITED STATES

About forty years ago a body of young men were taken to America for education by Dr. Yung Wing, a graduate of Yale. One or two conservatives who succeeded him in the charge of those students reported that they were learning too much, and they were all recalled. The past year has at last witnessed a renewal of that abandoned policy. Forty picked men have been sent to America for technical education under the superintendence of Dr. C. D. Tenney, and others are to follow. Dr. Tenney was president of the viceroy's school and he was appointed to conduct them by the enlightened Yuenshik'ai, who was viceroy at the time. The number of students pursuing their studies in Japan has risen to fourteen thousand; but it is well understood that in order to become equal or superior to Japan, China must go to the fountainhead for scientific knowledge, and not to Japan.

A NEW RAILROAD

I could fill a page with a list of newly projected railroad lines, and new companies, but I wish only to call attention to one that was opened about December, 1, 1907, on the west side of this capital. It is thirteen miles in length and of narrow gage — a microscopic enterprise, you may deem it — but it has the distinction of being the only road in China that has been constructed wholly by Chinese engineers and built entirely with Chinese capital. Every year is likely to bring a repetition of this triumph, as China acquires confidence in its ability and resources. The purpose of this little line is to tap the coal mines of those blue hills which we see from our upper windows. Hitherto their products have been brought to the city on the backs of camels — a slow and expensive process. The substitution of steam-cars for caravans is certain to be felt as a great boon by the people of Peking, as it must lower the price of one of the necessities of life and contribute much to a desired improvement in their style of living. The change of style in Government buildings is such as to strike the

eye of all visitors to Peking. New structures of a purely Occidental type are showing themselves in all parts of the city; and the flimsy fabrics that look so unsightly are doomed to disappear. At the same time, the improvement of the streets is being pushed with vigor and promises, in conjunction with the new style of building, to make a new city in the old capital.



THE PRESENT AND FUTURE RAILROADS IN CHINA
From "Railway Enterprises In China," by P. H. Kent

CHINA'S PLACE IN THE SCALE OF NATIONS

The representative of China at The Hague Conference protested with energy against his country being set down as a "third-class power." In deference to his patriotic appeal, the objectionable phrase was exchanged for the euphonious title "first-class Oriental power," whatever that may mean. It means, perhaps, that China holds a place somewhere between Persia and Japan. It might be a mistake to serve China, as it is at present, with an unqualified first-class ticket. Yet, if our patient search for "a tangible proof and hopeful signs" amounts to anything, it shows that China is not only on the way to a first-class position in the East, but that it aspires to a place by the side of the leading powers of the West.

TELEPHONES THROUGHOUT THE FLEET

EVERY BATTLESHIP AND TORPEDO-BOAT IN TOUCH WITH THE ADMIRAL AND WITH EVERY SISTER-SHIP WITHIN A RADIUS OF TWENTY MILES

BY

HERBERT T. WADE

THE Pacific fleet, commanded by Rear-Admiral Evans, enjoys the distinction of being the first American warships equipped for wireless conversation. After a preliminary test on the *Virginia* and the *Connecticut*, the apparatus was installed throughout the fleet. It is now possible for ships twenty miles apart to communicate.

For limited distances at sea, wireless telephony is an accomplished fact. But it is not probable that it will take the place of the wire system on land, except under extraordinary circumstances. Wireless telephony possesses a field of its own. Its future development will probably be to supplement rather than to supplant overland lines, for it is hoped that, by means of relays, the two systems may be used in connection with each other.

The realization of wireless telephony has been accomplished only after a vast amount of experiment and the invention and application of a number of most ingenious devices, each with its own particular function.

On the Pacific fleet, the instruments for wireless telephony are portable and compact and in weather-proof chests which may be hooked directly to the railing of the bridge, or placed in the chart-room or pilot-house. Connections are made with the ship's electric mains, to supply the current for the oscillator, and with the aerial wire suspended from the rigging. In a modern ship equipped for wireless telephony, an operator is always on the alert with a telephone at his ear, listening for signals; it is on him that reliance is placed for answering the first call of the telephone, for wireless telephony has not yet been equipped with the familiar call-bell of the land telephone. The operator's attention can be aroused by an arbitrary signal of dots and dashes sent with a telegraph-key in connection with the telephone transmitter — known as a "chopper," as it cuts off the waves — or he may hear the spoken words directly.

There is a listening key which must be turned to connect the aerial wire with the receiving instrument while listening, and back again to the transmitter when talking. Oral communication is thus maintained throughout the entire fleet, and the commander-in-chief can be personally in touch at all times with his subordinates. The limited range and the different wave-length used render the system less liable to interruption by a distant station or a hostile fleet than the ordinary wireless telegraph. In fog it provides a means of communicating orders to every vessel in the squadron.

In addition to the battleship fleet, the flotilla of torpedo-boats was also equipped for wireless telephony. This is a most interesting application. On account of the heavy smoke that these vessels emit, their signal lanterns and flags are often obscured, while the lack of the tall mast necessary for the aerial wire of the wireless telegraph and the impossibility of including a trained operator in the limited number of the crew, make the use of wireless telegraphy impossible.

In the merchant-marine there is also a wide field for the wireless telephone, for it is only the largest passenger-vessels that carry a regular wireless-telegraph operator. The telephone, on the other hand, can be operated by the mate or any other officer, and within its range limits it answers every practical need. Last summer the first practical test of the DeForest system was made in reporting a yacht race on Lake Erie from a moving power-boat to a shore station. On the Great Lakes and in the coastwise trade, it is rarely that the present limits of the wireless telephone are exceeded; with lighthouses and lightships that could be provided with this simple equipment, there is no reason why a vessel need be long out of shore-communication. In thick or stormy weather, signals sent out automatically from shore stations by a

gramophone or phonograph in connection with a transmitting apparatus would warn against danger. In addition to the ordinary messages, those involving pilots, towing, or docking would be of value to owners, agents, and masters, while in the life-saving and lighthouse services the establishing of communication between off-shore or other isolated stations and the mainland or some central point would enable information of shipwrecks, of meteorological conditions, or of other matters of immediate importance to be promptly transmitted.

Wireless telephony has lagged behind wireless telegraphy in its application, but in its origin it antedates it by some years. In 1880 Professor Alexander Graham Bell, the inventor of the telephone, and Mr. Sumner Tainter were able to transmit speech a distance of 700 feet. Improvements on this apparatus followed, culminating in some elaborate experiments made in Germany by Ruhmer in 1902-4. Since then Professor R. A. Fessenden, after experiments made at his Brant Rock Station, Cape Cod, claims to have maintained telephonic communication with New York City, a distance of about 200 miles; while in Germany the Telefunken Company established (in December, 1906) communication between Nauen and Berlin, a distance of about 26 miles. Notable work has also been carried on by Italian experimenters, and recently the British Admiralty has awarded a contract to the Amalgamated Radio-Telegraph Company to provide instruments based on the Poulsen system for a number of its war vessels.

In December, 1907, Mr. Poulsen announced that he had maintained telephonic communication between Lyngby (near Copenhagen) and Weissensee (near Berlin), a distance of about 250 miles, and he has predicted transatlantic telephony for the near future; but this confidence is not shared by many who have devoted much attention to wireless problems.

THE FOREIGN INVASION OF THE NORTHWEST

BY

F. G. MOORHEAD

CASH to the amount of half a million dollars a month for the past eighteen months has been retired from circulation by foreign laborers in the state of Washington alone. The amount in the three states which form the real Pacific Northwest—Idaho, Washington, and Oregon — has easily aggregated a million dollars a month. It is upon this fact that the white, native-born workingman has so bitterly reflected when paid a decreased wage in script.

Until railroad construction ceased in the late fall, between 12,000 and 15,000 foreigners, mainly from southern Europe and Asia, were employed by the day in Washington alone. When to these are added the aliens employed on the St. Paul system in Idaho, the Portland and Seattle, the North Coast and the Blackwell lines, and the constant outreaching of the electric interurbans of the three states, the aggregate for the Northwest may conservatively be placed at from 25,000 to 30,000.

These men have been paid wages ranging from $1.50 and $1.75 a day for section repair hands to $2.50 and $2.75 for graders and loggers. They have saved an average of about $30 a man every month throughout the greater part of last summer. These savings have not been stored away for safekeeping in any bank or invested—real-estate loans were bringing 10 per cent. in the Northwest in November —but have been kept in the conventional "old sock" or taken to the nearest post-office and exchanged for postal money-orders.

If there is any form of money which is desired above all others by the foreigners in the Northwest, it is the little blue sheet which Uncle Sam issues in the post-office. At the first opportunity that the men have to quit camp, they send their entire savings across the seas or invest in a money-order payable only to

themselves, and rest content. Banks may fail, but the foreigner quickly learns to trust the Government.

It is no uncommon thing in Cœur d'Alène, Ida., Spokane, Walla Walla, or North Yakima, Wash., or Portland, Ore., to see a score or two of swarthy foreigners in overalls standing in line in the money-order department of the post-office.

A BABEL OF TONGUES

The labor situation in the Northwest is complicated. Norway, Sweden, Germany, Austria, Bohemia, Hungary, Finland, Russia, Portugal, Spain, Italy, Greece, Roumania, Turkey, Poland, Holland, Japan, China, India, Africa, Australia, the Oceanic Islands, and the Pacific Islands, each furnished to the 1900 census immigrants in excess of 1,200—Hungary fewest, China and Japan a practical tie for most. Bohemia sent almost as many native-born sons and daughters to Washington, Idaho, and Oregon as did New York; there were as many that had been born in Turkey or in Portugal as born in Illinois; while practically as many were born in the Oceanic Islands as in Iowa. The aggregate population of the three states of the Pacific Northwest in 1900 was a little over one million. More than one-eighth were natives of Japan, China, and India. With a population of 413,000, Oregon had within its borders between 35,000 and 40,000 Chinese. Washington had the same number of Japanese in its population of 518,000. Notwithstanding the immigration restrictions, it is highly probable that the number of Chinese is larger to-day than it was in 1900, while the flood of Japanese has been enormous.

Within the last eighteen months a new element has been injected into the labor situation: southern Europe has greatly increased its contribution. Foremost among the immigrants have been Austrians Italians, Greeks, and Montenegrins.

Up to two years ago, Montenegrins were scarce, but at least 3,000 of them settled in Washington within eighteen months. The natives and the assimilated foreigners looked in wonder at the first swarthy newcomers. "Who are they?" was the question. "Montenegrins," came the reply. The word suffered by repetition and has become two words; and the newcomers are known throughout the Northwest as "mountain niggers."

Even that unfortunate little empire of Korea has contributed its quota, but their close resemblance to the Japanese has enabled the Koreans to escape detection. A colony of eight Koreans lived unnoticed in Spokane for some months until they disclosed themselves on the visit of Mr. Homer D. Hulbert, who had spent twenty-one years in Korea. They had been employed mainly as cooks, though some were university graduates.

THE COMING EUROPEAN PROBLEM

Much has been heard lately of the Japanese, the Chinese, and the Hindus in the Northwest, but the people from southern Europe are as much a problem as those from Asia. While labor has been plentiful and wages high, the native-born Americans have scorned such menial work as railroad-grading and logging. When carpenters are paid $5 a day and can scarcely be had even at that price, and when errand-boys in department stores receive $1.50 a day, the American workingmen are not going to bother their heads about any problem involving foreigners willing to work at cutting down mountains for new railroads at $2.50 for a nine-hour day. It was only when the financial flurry caused work to be shut down in some sections and cash was unobtainable in practically all sections, that the native-born white man began to trouble himself about the labor situation. He awakened one morning to find the banks intact, but cash withdrawn from circulation. On Saturday night his employer handed him a new kind of money, which he took with suspicion, for all paper money is shunned in the Northwest. He demanded gold or silver, but nothing was to be had but cashiers' checks and clearing-house certificates. Then he remembered that while he had been enjoying prosperity, the forgotten and despised foreigner had been receiving three gold double-eagles a month and laying aside two of them.

"We've all got our theories," said the employment agent, who found time hanging heavily on his hands for the first time in years, because there were no situations to fill, although plenty of unemployed. "I'll tell you what's the trouble with us: too much prosperity. We've been so excited getting good wages and spending them that we forgot all about the 'mountain nigger' and the Jap and the Dago putting away $50 a month in cash. Now they've got the money or have sent it home, and we're paying fabulous discount

rates to get it back and are living on paper that may not be worth any more to-morrow than the ink it's printed with."

Fortunately, the banks of the Northwest, with a few minor exceptions, have weathered the storm. But when the Oregon Railroad and Navigation Company, early in November, announced that the wages of section-hands would be cut from $1.50 a day to $1.20, and that the day's hours would be increased from eight to nine, and when the St. Paul and other systems laid off thousands of men, while building operations were practically at a standstill pending the quieting down of the money-market and the shipping of the crops, the native-born white laborer came to share the views of the employment agent. The aliens did not care particularly; they moved to a new field or, with a few hundred or a thousand dollars hidden away on their persons, went back to their homelands, to live the rest of their lives in comfort, or to return when work again becomes more plentiful than men.

Meanwhile the foreigners continue to come, for the news of "hard times" has not yet reached the remote districts of Europe and Asia. There is much railroad construction work yet to be done in the Northwest. With the coming of spring there will be plenty of work for all. This winter, however, there is likely to be some suffering and much quiet thinking over the situation, which may not be so quiet if it is aggravated again in the near future.

During the past summer interesting glimpses of the foreign labor element could be had in the employment agencies in town or at the grading or logging camps in the country. As a rule, nationalities clanned together, refusing work which took them away from their fellows. The high-priced work in new fields—railroad grading for new lines, in particular, tunnelling through mountains, filling up cañons, blasting down great hills—was seized eagerly by the Austrians, tempted by the wage of $2.50 to $2.75 a day and taking no thought for the permanency of the situation. It might be for a day, a week, or a month; the Austrian cared not. He turned his back on the permanent, lower-priced jobs and struck out into the wilderness, always with his countrymen. On the other hand, the Italians and the Greeks preferred the steady, lower-priced jobs and watched the Austrians without envy; they were content to become section-repairers on an established track for $1.50 a day and have work all the year round. The "mountain niggers" were a class by themselves. They were neither so adventurous as the Austrians nor so far-seeing as the Italians. They were slow to make up their minds. On the first day, they inquired if jobs were to be had; on the second, they asked for particulars; on the third, they inquired about wages and directions for reaching the place; on the fourth or fifth, having argued together far into the preceding nights, they were ready to talk business. They wavered between high prices and low, but for the most part followed the Austrians into the wilderness.

Of all these newcomers from southern Europe, the great majority went to railroad and logging camps, to work until they had saved up enough money to make them comfortable at home. They were classed always as the floating population. Very few went into business in the city. Italian push-cart men are scarce in Spokane, Seattle, and Portland. A few opened up saloons or lodging houses, but usually they sought day-labor and nothing else. Among the aristocrats, saloon keeping attracted the largest number. In Spokane alone there are to-day twenty-five Italian saloons, catering exclusively to Italian trade. Within the past year one Greek and eight Austrian saloons have been opened.

THE UNDESIRABLE HINDU

In the late fall still another element was injected into the labor situation. Driven out of Bellingham and other places on the Sound, the Hindu wandered down into eastern Oregon and Washington and northern Idaho. He was proud, high-caste, dirty, and dignified. He found himself looked on with suspicion, until it was realized what a harmless animal he was. He lived in tumble-down "shacks" which a white man, even from southern Europe, would have spurned; and there he prepared his own meals, with prayer, in the midst of filth that kept the curious away. His thoughts turned always toward Vancouver, where his people and his church were. At first he seldom went out on the street in daylight; the memory of Bellingham was strong. But as the days passed, he began to haunt the employment agencies—at first denying that work was wanted; later, with great, oxen-like, brown eyes imploring work. He was tried but soon found wanting. It will be a long time before the Hindu becomes

a vital factor in the labor situation of the Northwest. He cannot do the work; he is not wanted even by employers looking for the cheapest labor. The Hindu is physically weak and the work of the Northwest is for men of great strength or endurance.

The Northwest has always the Chinese and the Japanese. The former was vindicated long ago; the latter is more unpopular to-day than ever before, yet he is considered by far the most desirable laborer by the railroad contractors, who have tried all kinds. He does not overwork himself, but he works steadily; he sticks by the job until he has amassed as much money as he desires, no matter how hard the work or how long the hours. Whether it be in the sugar-beet fields of Idaho and Washington, or along the road-bed of "Jim" Hill's railroad, he is to be found in large numbers—small, swarthy, silent, working steadily, thinking all the time but wielding pick, axe, or hoe with clock-like regularity. He knows that the tide of feeling is rising against him, but he says nothing. On last Fourth of July he showed his diplomatic long-headedness by parading the streets of Spokane and of one or two other cities in large numbers, carrying American flags and shouting "Banzais" for the American Independence Day. But the enthusiasm was confined to the marchers; the native-born Americans stood on the sidewalk and watched in silence. They imagined that they understood the cause of this display of Japanese patriotism.

AUSTRIANS AS RAILROAD SECTION HANDS

They make $2.50 a day and save half of it. They do not mix with the rest of the population

CALLING THE CHINESE BACK

From having shut out the Chinaman, lynched him, and called him all manner of hard names, the Northwest has come to want more of him. He has not entered into competition

JAPANESE CULTIVATING SUGAR BEETS IN IDAHO
In spite of their capacity for work, they are more unpopular in the Northwest than any other race

with the white laborer, though what the changed condition of affairs may bring forth remains to be seen. Vending his garden-truck, washing the family linen, doing the menial housework, the Chinaman has plodded along. Whether it be preparing the salmon for the can at Astoria and on the Columbia, or working the placer mines near the international line, the Chinamen has gone ahead at the task set for him, hour after hour, with no regard for union restrictions—machine-like, faithful, persistent.

The employer of labor who drove him away ten years ago has changed his mind. For many years the city of Tacoma has been bereft of the Chinaman. The Tacomans arose in their might a decade or two ago and drove out every wearer of the pigtail, bag and baggage. To-day there is one Chinese merchant, but not another Celestial, in the city of 80,000. Now the employers want the Chinaman back. The Tacoma Chamber of Commerce has resolved in his favor, but the Tacoma labor unions have jealously guarded their interests

WHERE NO CHINESE ARE ALLOWED
Murray, Ida., the leading town in the Cœur d'Alène mining district

and the Chinaman has been kept out of Tacoma.

The Cœur d'Alène mining district has done likewise. So long as the shallow placers held out, after the original discovery a quarter of a century ago, the majority of the miners stayed with the diggings; when these began to get lean, the claim-owners attempted to turn them over to the Chinamen. This was so bitterly opposed by the citizens of Murray—the leading Cœur d'Alène camp—and by the wage-earners of the district that, after an indignation meeting and an election, the attempt was given up; no Chinamen have since been allowed in the Cœur d'Alènes. Later an attempt was made by "Dutch Jake," now the wealthy proprietor of the far-famed Cœur d'Alène saloon and music hall of Spokane, to place Chinamen on Lower Pritchard Creek, in Idaho. He personally brought in six; a public meeting was promptly held, a committee appointed to inform the Celestials that the Cœur d'Alènes was no place for them, and "Dutch Jake" lost little time in getting them to the river and floating them back to Spokane and safety.

Employers throughout the Northwest have reached the same conclusion as the Tacoma Chamber of Commerce and "Dutch Jake," but the Chinaman is still *persona non grata* at ports of entry. He reaches the country, but by devious ways. He secures the passport of a home-returned brother and impersonates him in the land of plenty until he also can turn homeward and his place be taken by a third; or he evades the watchful officers along the international line and comes down from Canada. Sometimes he escapes from a vessel coming up the Sound or the Columbia's estuary to Tacoma, Seattle, or Portland; but this is rare, for vigilant sea-captains, knowing the heavy fine to which they are liable, watch their "Chinks" during shore-stay with careful eye.

THE TYPE OF HINDUS IN THE NORTHWEST
Physically they are unfit for the hard labor of opening a new country

HINDUS AT BELLINGHAM, WASH.
Awaiting the train for Vancouver, B. C., after the race riot

The foreignizing of the Northwest has been going on practically ever since it was opened up to settlement and its possibilities were realized. But the situation has taken a new turn within recent months, thanks to the influx from southern Europe and to the changed conditions due to the financial flurry. There were none but Chinamen and Japanese to be bothered about before; to-morrow there will be the "mountain nigger," the Austrian, the Italian, the Greek, the Hindu, people from all over the globe; and each of these different peoples presents a new and difficult problem for the American of the Northwest, for none of them has ever been successfully assimilated by an Anglo-Saxon country.

MONEY-MAKING MODEL TENEMENTS

THE PHIPPS HOUSES IN NEW YORK, WHICH SUPPLY HEALTHFUL LIVING CONDITIONS AT LOW COST AND STILL PAY 4% DIVIDENDS

BY

LOUISE E. DEW

"I PROPOSE," wrote Mr. Henry Phipps to the original board of trustees of his model tenements, "to organize a society for the purpose of building tenement houses in the city of New York. I propose to give $1,000,000 for this purpose. I expect the tenements to be so planned as to earn four per cent. on their cost after allowing a proper amount for their maintenance and repairs. I intend to have earnings accumulate and be used from time to time in erecting more tenements."

The three buildings on Thirty-first Street, between First and Second Avenues, represent the original investment of $1,000,000, and although the first year is not yet closed it would so far indicate that they are earning 4 per cent. on the investment. It is estimated that this donation will mean as much to New York's tenement population in the years to come as the Peabody Donation Fund means to London. That fund was given nearly half a century ago, and to-day it provides model living accommodations for nearly 6,000 families and earns 2.41 per cent. on the capital invested. According to Mr. Grosvenor Atterbury, the architect of the Phipps houses, if

A CORNER IN A FOUR-ROOM SUITE (WITH A BATH) WHICH COSTS $6 A WEEK

THE PHIPPS HOUSES ON THIRTY-FIRST STREET, NEW YORK

The rooms are clean, sanitary, and cheap; yet the buildings pay 4 per cent. on the investment

their cumulative earnings are devoted to the acquirement of new lands and buildings, it will not take as many years as the Peabody Donation Fund has been in existence to number a "round hundred buildings, housing no less than 60,000 souls and covering, if grouped together, some fifty average New York City squares."

It is a pleasant surprise to one walking across New York in the tenement district to come suddenly upon the group of Phipps houses. They are of brick with terra-cotta trimmings, each six stories (and basement) in height, with a 60-foot frontage. On the main floor of the central building is the office, where a woman superintendent reigns over nearly 2,000 subjects. This feature is considered a great stroke of policy by the managers. In an official statement they claim that the percentage of loss from bad debts during the past year was only .07. This good showing is ascribed to the employment of women to act as collectors as well as general overseers.

In each building there are 427 rooms, arranged in apartments which rent as follows:

2	rooms	and	shower-bath	$2.75–$3.00	per	week
3	"	"	" "	4.25– 4.50	"	"
4	"	"	tub-bath	5.20– 6.00	"	"
5	"	"	" "	6.75	"	"

THE PHIPPS ORATORY
Where a non-sectarian service is well attended every morning

MR. HENRY PHIPPS
Who invested $1,000,000 in the model tenements

In return for these low rents the tenant is provided with light, sunny, airy rooms, a gas range, steam heat, hot water, shower or tub baths, toilet, good plumbing, laundries, a rest house on the roof, clean halls and stairs, and courteous attention. Telephone messages are delivered free of charge until half-past nine at night. Instead of being in the hands of janitors, as in the average tenement house, each building has its corps of engineers, carpenters, plumbers, porters, and scrubwomen, and when anything is needed the superintendent looks after the matter. In the apartments the kitchen and living-room are combined. The convenient plumbing arrangements and the gas range make it possible to cook in these rooms and still keep them clean and attractive. Instead of the foul, ill-lighted hall of the average tenement, with garbage pails on the landing and gloomy air-shafts, the Phipps tenants have a view of a large, open, entrance court which affords light and ventilation and gratifies their æsthetic senses as well. The courts from which all the apartments can be reached are designed as summer social centres, which will be an improvement on the street corners. They are now furnished with seats, and a fountain is to be added.

The front portion of the roof is given up to a garden where there are shrubs and vines, a pergola, seats, and two permanent pavilions

THE KINDERGARTEN IN THE BASEMENT

Instruction costs each child one cent a day

A PLAYGROUND ON THE ROOF WHICH ATTRACTS THE CHILDREN AWAY FROM THE STREETS

that afford shelter on stormy days and to those who care to sleep there on oppressive summer nights. The rear portion is given up to drying-yards. A visit to the roof on any pleasant day shows how much it is enjoyed. Children playing all sorts of games have a merry time, away from the hot, dusty streets. Babies sleep contentedly in their cribs while women rest and do their mending amid pleasant surroundings.

A COMBINED KITCHEN AND LIVING-ROOM

"Gas stoves and good plumbing make it possible to cook in these rooms and still keep them clean and attractive"

An excellent feature of the Phipps tenement, which was an afterthought, is a small rest-room on the first floor of one of the houses. At nine o'clock every morning a service is held in this miniature chapel by a resident, non-sectarian clergyman. The door is always open and anyone may enter the quiet room for a few moments' meditation. Since it has become known in the neighborhood that there is a clergyman in the building, his services are in great demand and he is called upon at all hours of the day and night by those in need. The little chapel has been the scene of many a curious wedding, and of many more christenings.

When the houses were planned, a large room was set apart in the basement of one to be used either as a play-room or a kindergarten. Each day, from nine to twelve, many of the children in the building, as well as others in the neighborhood, spend three happy hours there. The use of the room is given by Mr. Phipps, but the teachers are employed and paid by the New York Kindergarten Association. There is an average attendance of fifty children, who are required to pay one cent a day in order to encourage them to be self-respecting and independent of charity. This small amount pays for perishable material. A board-of-health physician visits the kindergarten daily to keep the neighborhood in a healthy condition. The kindergarten's effect does not end with its hours. Mothers' meetings are held regularly by the teachers, who explain the

aim of the teaching and show how the babies should be cared for at home.

The Phipps model tenement houses shelter nearly 2,000 persons at a low rent in clean, well-ventilated, fire-proof buildings which are earning 4 per cent. on their cost. The erection of these buildings is business, not charity, and this fact makes them all the more effective in pointing a way toward the betterment of tenement conditions. And they are appreciated. One small boy got at the gist of the matter when he pointed with some pride at the Phipps tenements and said:

"I live over in one of those houses where they has baths."

The houses are full, and there is a long waiting-list of families who also wish to live "where they has baths."

HUNTING INDIANS WITH A CAMERA

THE ADVENTURES OF MR. EDWARD S. CURTIS, WHO IS DEVOTING A LARGE PART OF A WORKING LIFETIME TO MAKING PERMANENT RECORDS OF OUR VANISHING RED-MEN

BY

EDMOND S. MEANY

PROFESSOR OF HISTORY AT THE UNIVERSITY OF WASHINGTON

Photographs copyrighted, 1904-07, by E. S. Curtis

BECAUSE of the singular combination of qualities with which he has been blest," wrote President Roosevelt of the photographer of Indians, Mr. Edward S. Curtis, "and because of his extraordinary success in making and using his opportunities, he has been able to do what no other man has ever done. . . He has lived on intimate terms with many different tribes of the mountains and the plains. He knows them as they hunt, as they travel, as they go about their various avocations on the march and in the camp. He knows their medicine-men and sorcerers, their chiefs and warriors, their young men and maidens. He has not only seen their vigorous outward existence, but has caught glimpses, such as few white men ever catch, of that strange spiritual and mental life of theirs."

Catching glimpses of the inner life of the Indian is an uncertain and often a dangerous occupation. Sudden caprice or unfounded suspicion may spoil the work of months.

The story of Mr. Curtis's visit to the Sioux of the Wounded Knee will give a little idea of the difficulties. Two years ago Mr. Curtis—or, as the Sioux call him, "Ba-zahola Wash-ti"—made a long trip into the Bad Lands of South Dakota. His guide and leader was Chief Red Hawk. Mr. Curtis promised to return and give a feast to the chief and twenty of his followers on the banks of the Wounded Knee. Through the good fellowship growing out of the feast, Mr. Curtis hoped to secure photographs and records of many of the

MR. CURTIS IN CAMP

MYTH CHARACTERS AS SEEN IN THE NAVAJO RITES

A NEZ PERCÉ YOUTH

ancient Sioux customs. But Red Hawk found it impossible to restrict the invitations; instead of twenty, 300 gathered for the feast, and among them were chiefs equal in rank to Red Hawk. They felt that they must make their importance felt. Chief Slow Bull had brought his council tepee, decorated with buffalo-tails and with a horse's tail floating from the peak. It had come down to him from his father, and his father's father, with traditions of war-parties and the chase. Into this tepee Curtis was invited for a council. After his speech, Iron Crow, one of the chiefs, replied that to make all perfectly happy would take more beeves than Mr. Curtis had provided. He was reassured, and the council broke up with many "Hows" and much handshaking. But, as the first procession formed in the morning, Slow Bull raised his voice in that wild, matchless oratory of the Indian and brought the procession to a sudden halt. He, too, wished to be placated with more beef. Then a careless teamster nearly ruined the whole enterprise by throwing off one of the sugar-bags with the oats. After it had been rescued, the feast was finished without offense to any-one's dignity. Then, with true Indian caprice, they decided that they must rest and smoke for the rest of the day. Again the plan seemed on the verge of failure. Red Hawk had lost control.

Mr. Curtis quietly folded up his camera, as if he had not traveled many weary miles just to get these pictures. There was no fault-finding, no impatience; but, with infinite tact, he discussed affairs with some of the leading spirits. During the night a reaction in sentiment set in. In the morning the warriors, led by Red Hawk and Slow Bull, rode into camp. Their hearts were happy, they said, and they wished to help their white friend. Old rites were reënacted, old battles re-fought, old stories retold; and Mr. Curtis's pen and camera recorded it all.

IN THE LAND OF THE NAVAJO

TAKING PICTURES UNDER FIRE

At other times, in the Southwest, even after the chiefs had agreed to the picture-taking, crowds would collect in front of the camera. He had to leave one village by night without

RULERS OF THE PLAINS

AT THE WELL—A HOPI PICTURE

ceremony because a baby whom he had photographed died. On another occasion he was shot at four times and almost ridden down by a drunken Indian. He has been at ceremonies and has seen things which white men do not see with impunity. Yet his knowledge of the Indians and his unfailing tact have pulled him through.

Mr. Leupp, the United States Indian Commissioner, said:

". . . Mr. Curtis's harvest has passed far beyond the statistical or encyclopædic domain; he has actually reached the heart of the Indian, and has been able to look upon the world through the Indian's own eyes."

During the past season I was with him among the Sioux on the great Northern plains. The study of the Indian has been my summer work for a number of years. During this time I have met ethnologists, archæologists, linguists, historians, and artists, but none of them seemed to come so close to the Indian as he; so close that he seems a part of their life. A rugged old chief who had been a leader of his people for a lifetime once asked Mr. Curtis: "How did you learn to be just like the Indians?"

He will discuss religious topics with a group of the old men; they will pass the pipe around the circle and say. "He is just like us, he knows about the Great Mystery."

There have been many hardships in Mr. Curtis's work besides the dealings with the Indians. I have a keen recollection of our first camp among the Ogalallas. At dark a terrific storm struck the camp. The tent-poles broke and the tents flattened to the ground. Five Indian ponies in the neighborhood were killed by lightning. At another time the equipment wagon got stuck in the mud in the middle of the White River and had to be taken apart before it could be got out. To the traveler such experiences are not so serious as to the photographer, for the results of many months of hard work may be lost in a moment by a careless driver. And these months of work are necessary, for to get really acquainted with the Indian one must live with him in his own country. Elsewhere one Indian is much like another. At home racial and tribal distinctions appear. Environment, of course, has most to do with this. The Indians along the shores of the Pacific Ocean depend upon the sea for food and, naturally, the sea also gives

NAVAJO MEDICINE MEN

them their traditions, and figures in their religion. Two hundred miles eastward, over the Cascade Mountains, the tribes know of the sea only in vague stories. Their food, like their traditions, comes from the mountains and plains, the rivers and forests. The bear, used as food in one place, is sacred in another; the snake, repulsive almost everywhere, is in the Southwest a prized accessory to a profound religious ceremony.

A WHITE MAN IN A SNAKE-DANCE

At one time last summer, on the plains of Dakota, a large rattlesnake was encountered near our camp. Instantly everyone, including the Sioux and Crow guides, gave earnest chase and killed the reptile. When Curtis heard of it, he asked that they kill no more, for he had received the unusual honor of being made a priest of the snake religion by the Indians in the Southwest. With native initiates he had fasted nine days before beginning the race over the desert to capture rattlesnakes. Later he handled them, even holding a wriggler in his teeth. As is the custom, watchers were always at his side, but few people who have seen a rattlesnake in action would care to entrust their safety to a watcher, however alert. But this ceremony was necessary, for after it Curtis was able to make a series of unique photographs of the ceremony. At another time a group of Indians were posing in the nude for one of their great ceremonies when one brave, excited or angry, grabbed several handfuls of dirt and gravel and threw them at the camera. This raised an unexpected and serious situation. Hesitation would have spelled cowardice to the Indians, and yet Curtis was, of course, powerless against the crowd. Nevertheless, he drew his knife and rushed for the offender, who fled. The decision of the act pleased the Indians. Without any further demonstrations they completed their posings and the pictures were taken.

Mr. John Muir, the noted naturalist, maintains that one of the most exciting moments in his life was the sight of Curtis and his assistant fighting for their lives in a canvas canoe in the bay at the face of Muir Glacier, when they were making photographs for the Harriman Alaska Expedition. The weight of the two men and their equipment bore the canoe down almost to the level of the water. Immediately in front of them, a great berg broke from the face of the glacier. To the rest of the party on a near-by hill, the canoe seemed to have been caught in the fall. But, as the berg came to the surface and began to move out on the swell of its own making, the canoe came to the crest of the first great wave and began its fight for existence. The swells had hardly subsided when another berg broke off, and the men had to begin their struggle again. Some of the watchers looked away to escape seeing the apparently inevitable end. But Mr. Curtis came out of this danger unharmed, as he has from the many others which he has encountered in his trips among the Indians.

HANDLING THE RIVERS OF THE NATION

A SCIENTIFIC METHOD TO PREVENT FLOODS, DO AWAY WITH LEVEES AND CANALS, AND MAKE THE RIVERS NAVIGABLE

BY

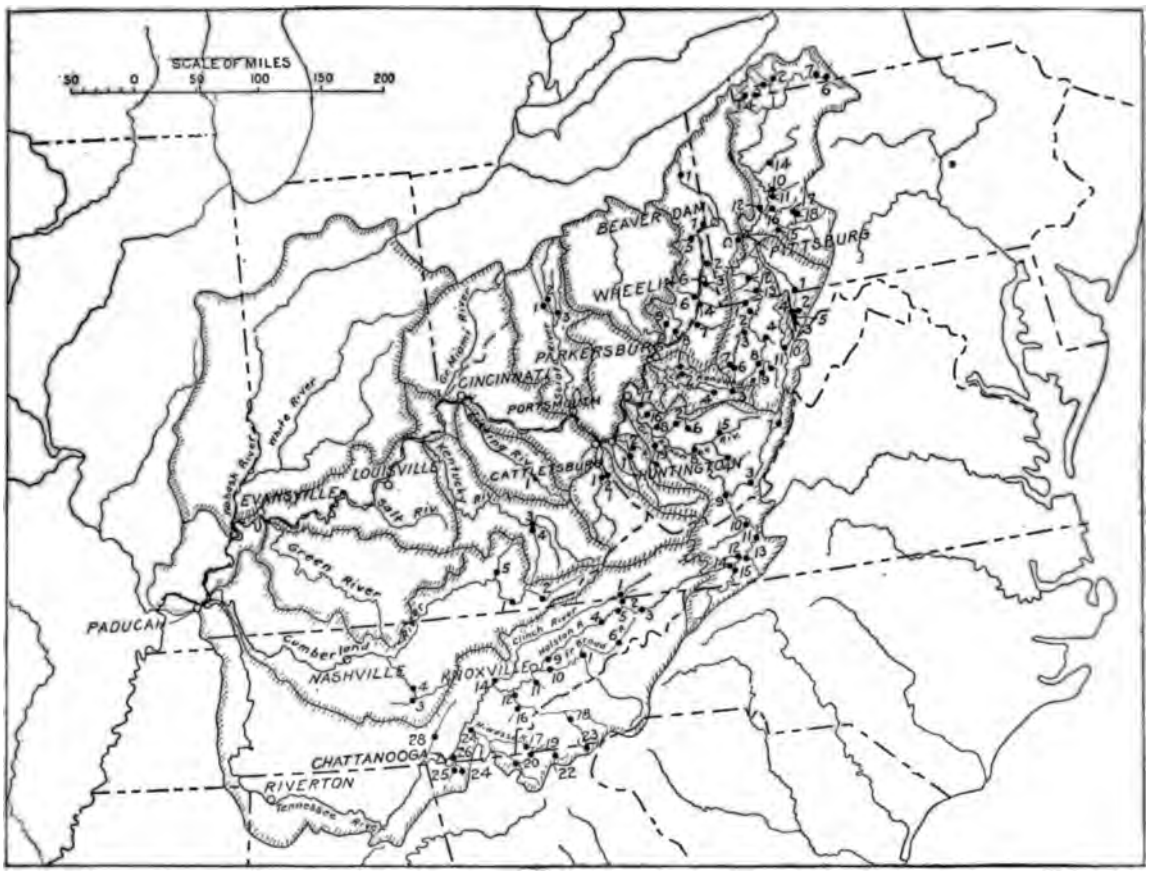
WILLIAM ATHERTON DUPUY

ONE of the greatest engineering problems ever given to the world is that which has just been outlined to the Inland Waterways Commission by Mr. M. O. Leighton, chief hydrographer of the United States Geological Survey. It contemplates the control of the vast water-flow of all of the rivers of the United States. It shows how that flow can be regulated to prevent floods and at the same time to guarantee a given depth to any stream for navigation during dry seasons. It produces the proof that this may be accomplished in such a way as not merely to be a great public benefit but so that it will also pay a reasonable direct income from the investment and, at the same time, open a new era of development to regions along the inland waters.

The plan offered by Mr. Leighton is to build storage reservoirs near the headwaters of streams. He believes that the logical way to control a river is to govern the sources of its water-supply; for it is here that floods chiefly originate because of the fact that the rainfall runs off steep mountainsides more quickly than off plains below. By conserving these quick-spilling waters, the slower flow of the lower lands would be given opportunity to empty itself and the stored waters could be let out at a subsequent time, when they would be beneficial rather than a danger to life and property. The forests, which soak up the rain and release it gradually, are the natural reservoirs designed by nature to prevent floods. The more they are protected, fewer the artificial reservoirs will need to be built. The creation of the proposed Appalachian Forest Reserve is almost an integral part of this great scheme. He argues that in the majority of cases the attempt to control the floods by confining the rivers between high and expensive levees is improper and illogical. If the water-supply should be stored at flood-time and released during dry seasons, it would maintain navigable depths in the streams and obviate the necessity for canals.

The plan, if adopted, will change the whole course of river improvement as carried on by the Government in the past. Compared with the new plan, dredging and building levees along the lower portions of the rivers, so long practised and maintained, are but makeshifts. They have not proved a permanent solution of the great problem. A dredged channel does not last, and the levees have to be built higher and higher as the rivers build up their beds.

The greatest river problem in this country is the Mississippi system. The country for



THE PROPOSED SITES OF A HUNDRED RESERVOIRS

To control the floods of the Ohio basin

hundreds of miles above the mouth of that river is constantly threatened by floods. Much of it is protected by levees which grow constantly, raising the river-level with them and consequently becoming a greater menace. As the forests are cut from the water-sources in the Alleghenies and the Rockies, the waters run off more quickly and the floods become more torrential, concentrate quicker, and do greater damage. The water running off more quickly makes the period of navigable depth shorter and the streams less valuable for purposes of trade. And all this is cumulative in effect, for the increasing floods from the deforested regions carry more and more sediment with them and deposit it in the lower reaches, filling in the dredged channels and raising the level of the river.

AN END TO DESTRUCTIVE FLOODS

Under the reservoir system, the floodgates on the Ohio, the upper Mississippi, the Missouri, the Arkansas, and on all of the other tributaries of the great stream would be shut down in times of high-water. The water taken in this way from the flood in the wet season would prevent the stream from ever reaching the danger-mark on its lower course. The increase of levees would be unnecessary. The torrents would not carry the vast quantities of silt to the lower river and less dredging would be needed. Then, the temporary danger past, the stored waters could be discharged throughout the dry season and the navigability of the stream maintained. This navigability could be extended to streams not now used for such purpose, and the scope of water-traffic greatly increased. The flood-water, which is now an element of dread, could be so harnessed as to play a useful part in the activities of the nation. And the flood reservoirs would afford an opportunity to practise the lessons that are being learned in the recent study of our water-courses—that when flowing in certain volume a stream will deposit silt near its mouth, which at other times is scouring out its channel and again flowing over its bed without changing it. Every year adds to our knowledge of these processes. With definite data for their several rivers, the men at the reservoirs can so regulate the flow that the rivers themselves can be made to dig their channels and keep them dredged clean.

Mr. Leighton's conclusions are drawn from a careful study at first-hand of the engineering possibilities presented by the streams of the Ohio basin. They are further based upon detailed knowledge gained by the Geological Survey about the topography of the Ohio basin, which has been accumulating since that branch of the Government service began. It is a plan based on the accumulated facts of twenty years' investigation.

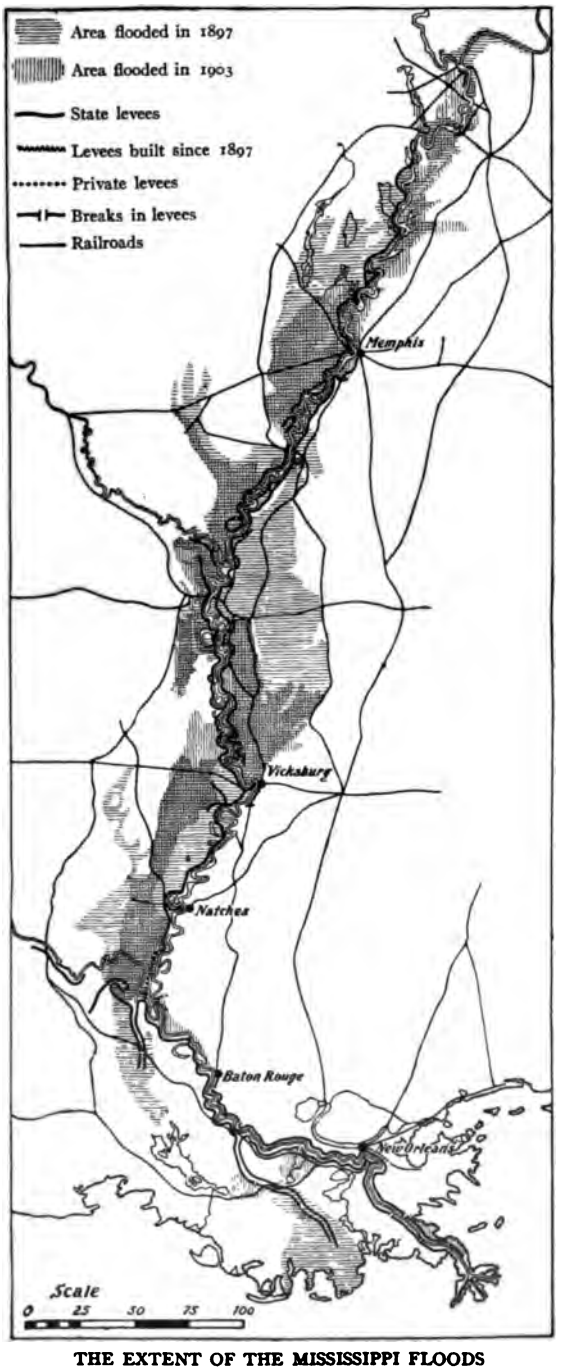
The direct problem which Mr. Leighton has sought to determine has been whether or not there is available, on the highland tributaries of the Ohio, sufficient storage capacity to prevent floods and to maintain deep-water navigation during seasons of low-water. He wished to obtain on each river sufficient storage capacity to hold all the flow of certain parts of its basin for a period of one year, if necessary. This is desirable in order to avoid the danger of one flood following another, finding the reservoirs full, and overflowing the country below. The observations of the Government's Weather Bureau for many years have made it possible to know with comparative accuracy what the rainfall over a given basin will be, and more than this, of course, the river does not carry. It has been found that this adjustment of reservoir capacity to a drainage basin can readily be made on the Allegheny River, the Monongahela, the Kanawha, the Little Kanawha, the Kentucky, the Licking, the Scioto, the Great Miami, the Cumberland, the Tennessee, and many of the smaller tributaries of the Ohio.

THE PROBLEM ON THE MONONGAHELA

Of all of these river-basins, that of the Monongahela is probably better known from reliable surveys than any of the others. On this stream it is proposed to erect eighteen reservoirs. They would range in depth from sixty to two hundred feet and would conserve the water from basins of from 15 to 800 square miles in extent. These would retain the floods from the upper 38 per cent. of the basin drained by the river. If they had been in operation, the flood that did such great damage at Pittsburg and below, in March, 1907, would never have occurred.

Had the reservoir system been installed at an earlier date on the Monongahela, it would have been unnecessary to canalize that stream, as has been done from its mouth to Fairmont, W. Va. at a cost of more than $6,000,000 for the construction of fifteen

dams, and of $2,000,000 for maintenance. According to Mr. Leighton's careful estimates, the stored waters of the reservoirs, let out at the proper time, would have increased the depth of the lower river five feet, under average conditions, for 150 days during the dry season; and the stream would have been readily navigable throughout the year. In addition to this, water-power of very great value would have been created all along the water-course.



THE EXTENT OF THE MISSISSIPPI FLOODS
Which occur in spite of the increasingly costly levee systems

While the Government is considering a plan for the canalization of the Ohio River from Pittsburg to Cairo, Mr. Leighton calls attention to the effect of a system of reservoirs on that stream. He does not hold that the nine-foot channel can be maintained throughout the year so far up as Pittsburg, but that it will be unnecessary to use locks below Huntington, W. Va , except in the avoidance of rapids. If the proposed reservoirs were three-quarters full, they would raise the river ten feet between Huntington, W. Va., and Paducah, Ky., for about one hundred and ten days during the dry months. If they were only half-full, the period would be about seventy-five days.

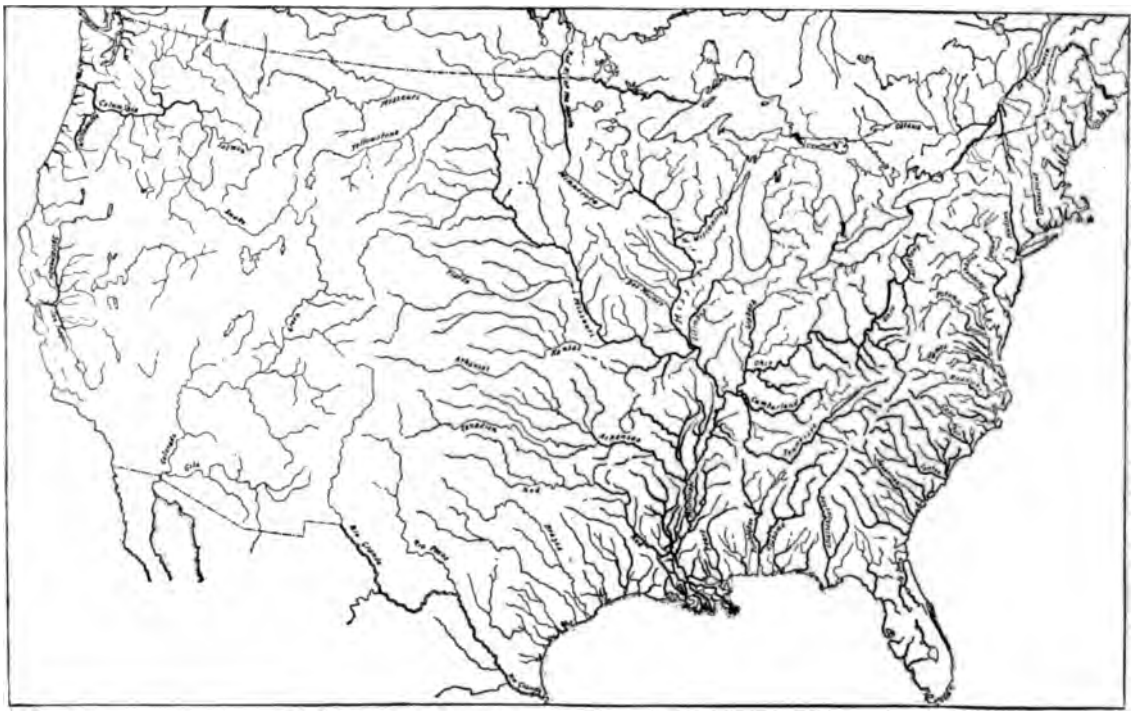
One of the most important advantages of the reservoir plan is that its effectiveness increases in proportion to the progress from the headwaters. While the ills of Pittsburg would not absolutely be cured, those of the lower Ohio would; and, with the whole broad plan in operation, the problems of the Mississippi would be permanently solved. A flow of that stream sufficient to admit large boats could be easily guaranteed to St. Louis and higher, while that of the Missouri and other of its longer branches would be equally benefited. The principles applied to the Mississippi might be brought to bear on many of the streams of the Atlantic coast and on two or three of the Pacific. All of the waterways of the land might ultimately, in the opinion of Mr. Leighton, be regulated in their flow, to the great profit of the various communities. Each river will need a series of reservoirs to control its floods, maintain its navigability, and utilize its water-power — all beneficial to the people along its banks — but the full sweep of the plan shows these benefits passed on and increased to the people along the lower Ohio and the Mississippi, from Cairo to the Gulf. The water-courses of the Mississippi basin, when properly regulated, will be as increasingly valuable as they are now increasingly destructive.

THE EXAMPLE OF RUSSIA

Should the United States adopt such a policy of water conservation, it would not be absolutely a pioneer in such work, for Russia

has stored water by systems of reservoirs at the heads of the Volga and Msta rivers, and by that storage has made those streams navigable throughout the year, and has vastly increased the prosperity of the country through which they flow. Here, however, the engineering requirements were much simpler, as the streams passed through a series of lakes near the headwaters, and these lakes were converted into reservoirs by dams raising their levels but a few feet, an easier method of construction than that required in the mountainous regions of the United States.

The cost that would attach to the construction of the reservoir system in the Ohio basin alone is still a matter of rough estimate, based upon the cost of such dams built at other places. The whole of the basin is not covered by the present report, for there has not been much investigation of some of the northern branches of the Ohio, such as the Wabash and the Muskingum. With the streams already examined, however, it will be possible to control the floods and, with the inclusion of additional streams, that control would become more absolute. The control based upon the present report contemplates the erection of 100 reservoirs. These would cost, roughly, $1,250,000 each—or $125,000,000 for the entire basin. If superior sites were discovered, upon further investigation, this cost might be reduced, for the greater the capacity of a reservoir the cheaper can a given amount of water be stored. This cost would probably be one-fourth of that necessary to control the waters of the whole Mississippi valley, and a still smaller part of that needed to control the streams of the whole nation.



THE NAVIGABLE RIVERS (HEAVILY SHADED) OF THE UNITED STATES

Most of them could be better regulated for traffic and rid of floods and drouth-periods by scientific forestry and the construction of reservoirs on the Appalachian slopes

THE COST NOT EXCESSIVE

In figuring the cost of such an undertaking, it should be remembered, in the first place, that it represents a national policy that must extend over a series of years, and that the expense would fall gradually and progressively. The nation has already spent upon the improvement of its rivers and harbors sums that would be appalling when viewed in the aggregate, and it is contemplating the expenditure of other vast sums upon such

propositions as the canalization of the Ohio. Much of what has been paid out has been spent on temporary makeshifts, and it is cheaper in the long run to begin at the fountain-source of the trouble and build for all time. The futility of the time-worn policy of dredging is cited as an example of the folly of some of the past and present methods.

The money that would be saved from other expenditures by the adoption of the reservoir system, and the particular revenue that would be derived from the various phases of the contemplated work, would make the figures appear rather in the light of a desirable investment than of a monstrous expenditure.

In the first place, the navigation of all of the rivers would be placed on a more effective basis, through the reservoir system. Navigation would be extended into the tributaries of the great streams where it does not now exist; for example, the Tennessee River would have a nine-foot channel for hundreds of miles now closed to traffic. Almost all future expenses for the canalization of rivers would be saved.

The benefits from flood-prevention would be more valuable than those from navigation. It is estimated that the floods of 1907 in the Ohio Valley caused $100,000,000 worth of damage. This estimate could not include the loss from the depreciation of property values along the streams, which is probably the greatest of all losses. The prevention of that flood would have saved the people the cost of the hundred reservoirs. And the benefit would extend to the point where these head-waters ultimately reach the ocean, and property values would be enhanced all the way.

The phase of the work that would bring into the Treasury of the United States a direct cash return, which might prove sufficient to pay a direct interest on all moneys invested, is the use of the water for the generation of power. Rivers that cannot now be harnessed because their flow is too variable would, when regulated by the reservoirs, furnish valuable power. The engineers estimate that the power available in the Ohio Valley, at $20 per horse-power-year, would pay 3 per cent. interest on an investment of $225,000,000.

Such is the proposition which Mr. Leighton has submitted to the Inland Waterways Commission. It will form a part of the report of that body to the President when it has finally gotten its perspective upon the vast task that is before it, for the regulation of our waterways is one of the great natural problems which confront this country. On the proper use of our land — the swamp and arid as well as the rest — on the proper use of our forests, coal fields and waterways (perhaps the most important of all) depend the permanent economic development of the United States, and, therefore, the comfort and happiness of the people.

HOW WILL OUR GREAT-GRANDCHILDREN BE DOCTORED?

THE SPLENDID ACHIEVEMENTS AND THE TREND OF MEDICAL PRACTICE

BY

DR. EDWARD A. AYERS

GIVE a good dog a bad name, and the chances are that he will be a dead dog before his virtues are discovered. Start a great science in superstition, soothsaying, incantation, humbug — in everything except common sense — and wonder not if the great virtues of its lusty youth are long delayed in popular greeting. Take surgery from the razored hands of the barbers and physicking from legend-loving monks and place them under the care of world-picked devotees of investigation and progress; but do not look for a swifter than posthumous fame. "Throw physic to the dogs," exclaimed the overwrought Macbeth to the symptom-treating doctor, which was wise in Macbeth, though unfair to the dogs.

A few years later, as the great Shakespeare

was passing away, Harvey astounded the wise men of medicine by showing the circulation of the blood. It is a wonderful story — the medical serial, from then to now. Yet, in the year 1907, the profits from sales of patent medicines in these United States could have bought England and Scotland in 1607. What wondrous power has spared the dogs?

Medical science is a very young child to-day, but it has grown more these past forty years than in all previous ages.

Our ancient medical worthies were splendid anatomists, and made the best use of the naked eye; but they could see no cells nor germs. Neither did they make good guesses, after taking the body-machine to pieces, about how it was run. Think of a lecture on physiology, the study of the functions of the body, and the professor ignorant of the circulation of the blood! The curriculum in those days must have been short and easy. The microscope, medicine's greatest friend, made it possible to examine minute anatomy, and to-day its great service in the study of form is nearly rendered. Every single cell of the body has in turn filed past our great reviewers. Here is the man-machine, the finest model from Nature's factory, all taken apart, and now — how does it run? Well! We would need a thousand pages of a big book to print concisely what we know about nutrition, locomotion, sense-mechanisms, respiration, circulation, nerve work, secretion, reproduction, and other functions, and no worthier product of man's labors exists than the explanation of the work of the vital functions of the body in our physiologies; but we want to rival and outrival Nature in being able to engineer this great machine through health and disease. As the anatomists had to wait for the microscope, so the physiologist must now wait for the chemist. Any good physiologist can tell you about the outward manifestations of digestion, circulation, respiration, reproduction, and go far into the minutiæ, too, but he cannot himself tell what nerve waves are, or what the chemical formulæ of the ferments are. He cannot deliver a lecture on obesity that will satisfy the cravings of an expert, that will enable any chemist or microscopist after examination of blood or lymph to state whether they came from a lean or a fat man.

In the violent explosion which follows the application of a lighted match to gunpowder, we see a sledge-hammer form of chemical action. In the ultra-refinements of bodily glandular secretions which drive or check the susceptible heart, we see the most delicate variations in chemical action — see their results. The book that will fully describe what is yet to be written about the forces which control reproduction, growth, heredity, immunity, nerve influences, disease, and decay, will cover more pages than the Bible.

DISCOVERY OF THE GREAT GERM WORLD

The microscope not only improved the study of anatomy; it made the discovery of germs possible. Bacteriology has in forty years become a great science. Magnificent results have followed Pasteur's initiation of germ search. We already not only know these "black hands" of the underworld, but how to kill many of them and keep them out of us. Cholera was, in our fathers' times, a mysterious terror which held up civilization. It cannot cause one throb of fear to-day in any well-regulated port. The black plague killed 300,000 people in Bombay last year, yet its existence is now an unmistakable mark of ignorance or inefficiency. Diphtheria was a terror in the minds of all parents twenty to fifteen years ago, but it is so no longer. There are a few germ diseases whose germs have not been discovered, such as scarlet fever; others are well-known but not under control, such as pneumonia and tuberculosis; others are well-known and should be well-controlled but are not, such as typhoid; and there are those which we know, can control, and do, such as cholera.

MAN AND HIS PARASITES

"Hobbes clearly proves that every creature
Lives in a state of war by nature.

So, naturalists observe, a flea
Has smaller fleas that on him prey;
And these have smaller still to bite 'em;
And so proceed *ad infinitum*."

About one hundred and thirty parasites afflicting mankind have been catalogued, and their control, as compared with germ diseases, is not difficult. Malaria, yellow fever, perhaps for dengue and beri-beri — kill the mosquitoes! Uncinariasis — wear shoes! Plague (a germ "parasite") — kill fleas, rats, mice, and infected squirrels! Sleeping sickness — give the investigators a little more time! Trichinæ — taboo raw pork! Parasites have almost

ruled the tropics, but man will soon rule the parasites — and then he will also rule the tropics.

SURGERY FAR IN THE LEAD

By the help of anæsthetics, wonderfully good instruments, perfected anatomy, germicides, medical knowledge, and electric and ultra-violet illumination, direct knowledge and surgical treatment of nearly every portion of the living body can now be obtained. Surgeons cannot turn a man inside out, as a glove, but their eyes can inspect the retina, the cavities of the nose, and can see down the throat into the second and third divisions of the bronchial tubes. They can view the interior of the stomach, ear, intestines, bladder, and womb. They can illumine the cavities behind the eyebrows, those in the upper jaws, the lungs, stomach, and some portion of the intestine beyond direct inspection. With the Röntgen ray they can view the outlines of fractures, growths, and displacements of bones; coins, marbles, pins, bullets, and other body-nestling foreigners. What can be neither seen, heard, nor felt, can often be safely examined, if urgency of symptoms demands, by "exploratory incision." One of duplicate organs — like the kidney, and even the spleen, gall-bladder, stomach, and several feet of intestine can be removed.

The final centres — brain, heart, and lungs —can be dared with some discretion. The "vital" line has been steadily pressed back. To-day is the flower and fruit of surgery, and American surgeons deserve greatest credit.

THE OPPORTUNITY OF MEDICAL CHEMISTRY

Neither surgery nor the control of parasitic diseases depend much upon chemistry, but there is a houseful of ills due to chemical variations, and everybody is subject to them. They are the heart and kidney-diseases; the "toper's liver," gout, rheumatism, "old-rubber" arteries (arterio-sclerosis), apoplexy, paralyses, convulsions; premature decay of teeth, eye lenses, and hair; obesity and sleeplessness. Surely chemistry offers great hope for the future.

We have a very practical knowledge already of the digestive secretions from stomach, pancreas (a gland in the abdomen), and intestine; of four or five whips which make of the heart a galley-slave that never sleeps; about the scarlet paint in the blood that gets blue after freighting oxygen to the hungry cells, carting its carbon-dioxide load to the lungs; about the germ-fighting power of the minute, pale-faced leucocytes floating in the blood; and about the ten-thousand-paged story of human machinery. But just what secretions are fed to the blood, air-sacs, nerves, and cells; what are their exact chemical formulæ, how much is fed, and when — whereby our magnificent machinery with multiform duties is guided in healthy equilibrium — is for the unwritten book. To be able to supply the secretions is the task before medical chemistry. What intangible force robs the crystalline lens of its resiliency long before we are too old to read? What stiffens the rebounding arteries and leaves the poor young heart to pound itself to death? or the guards at the air-sacs to fall before the ever-pressing germs? or the kidneys to become incompetent in the heyday of great men's lives? or the succulent youthfulness of protoplasm to dry up till the spirit of youth has fled — allowing bones to grow brittle, muscles to stiffen, pates to grow bare when drafts most chill the blood? Then there is the fat man and the lean man; the Ponderosus who can stay less fat only by semi-starvation, and the Cassius whom gluttony would leave thinner than before.

What delicate switching here shunts fat to the store-room of Adiposus, but burns it in the lean and hungry? Why our exhilaration on a brisk, clear day, and depression when it is "muggy"? Why do more suffering mortals commit suicide in summer than in winter? Even the man whose brain never gets beyond means of gratifying successive appetites as they arise can give some sort of answer; but you and I know that there is an exact answer lying in the deep recesses of undiscovered chemical realms. Medical blasting has already uncovered outcroppings of this greatest of prizes.

THE DUCTLESS GLANDS

Everybody knows about the stomach, but few have even heard of the adrenals, glands which lie just above the kidneys; thyroid, in the throat; and pituitary body, a small gland near the root of the nose. Yet man can survive removal of the stomach but not of these glands. Goitre, which shows in the swelling of the neck, is enlargement of the thyroid; Addison's disease originates in the adrenals. Acromegaly (abnormal enlargement of the

bones of head and limbs) is believed to involve the pituitary body — which lies under the anterior part of the brain. Cretinism is a disease caused by deficiency of secretion from the thyroid gland. It is most frequent in children, and is expressed in fundamentally defective development, idiocy, stunted growth, old age in childhood. Cretins can be caused to "bloom" so long as fed on thyroid extract — a fact of much portent. The "internal secretions" show well-known effects in health. Through chemistry, the great field of antitoxins is rapidly developing. Ever since Jenner's great smallpox discovery, a rainbow of promise has spanned the horizon; and already Behring's diphtheria, Pasteur's hydrophobia and tetanus, and, probably, Flexner's meningitis antitoxins, have justified our hopes. In the public mind exploitation per newspaper seems always to outweigh results, and a pessimistic feeling prevails. But never has exultant optimism been so fully justified as now. Even the malignant tumors are beginning to yield. A book has recently appeared which, if it prove true in the main, is the book of a generation in medicine. Sajous in "The Internal Secretions and the Principles of Medicine," undertakes to systematize the work of the ductless glands and other allied organs.

Sajous formulates the whole system of ferment-automatism as follows: The adrenals and thyroid, and the other contributors of internal secretions, provide the material for these ferments; the pituitary body is the "test-organ" which regulates their influences; and the leucocytes (white blood corpuscles) are the chief agents of these ferments in blood scavengering.

THE KEY TO NATURE'S FIGHT AGAINST DISEASE

Under ordinary, healthy conditions, the leucocytes will convert everything "eatable" in the blood — food-products, germs, and broken-down cells — into tissue cells. If the vital energies are below par, or the access of germs is too great, the fighting leucocytes and the blood-liquid will get whipped.

It is the special duty and ability of the pituitary body, thyroid, and adrenals — assisted by the pancreas — to increase the natural standard of fighting-power by contributing more secretions (opsonins) and other antitoxins.

This is the process followed by our manufacturers of antitoxins. Certain drugs and animal extracts will enhance the work of these glands, making one man immune and another able to win his fight against disease.

Such is Nature's method of cure in all fevers, even in the regulation of daily health; and now, knowing what to do and, to a considerable extent, how to do it, medical practice becomes a scientific system. If A is going to die by pneumonia because "supporting" treatment with heart-tonics and oxygen tanks prove insufficient aids while the blood is fighting a losing contest with the pneumococcus, and there enters upon the scene a newer therapy that knows what the blood is trying to do, why it is going to fail, and how successfully to aid it, that puts into that blood an antitoxin which turns the tide of battle, that, at the beginning of the attack, so raises the blood's anti-bacterial power as to prevent further breeding; the treatment is wise, the choking of further air-sacs by the advancing hordes will cease, and A will recover. This is just what has been accomplished in diphtheria and it is just what will be accomplished some day in all similar diseases.

This is indeed a great revolution, Sajous right or wrong (for his part is mainly an effort to systematize the whole); and there never has been a time for such medical optimism as now.

Chemistry will produce by exact formulæ duplicates of our internal secretions, which will largely need reach the blood direct to avoid transmutation. Drugs will undergo considerable reclassification and elimination. Tuberculosis and pneumonia will almost certainly be under control by antitoxins before our great-grandchildren are born. Scarlet fever, measles, and whooping-cough will be overcome, as diphtheria has been overcome. We expect Flexner's antitoxin for cerebrospinal meningitis to "make good." La Grippe will hold out long, for an attack does not seem to give us immunity. No safe predictions can be made about cancer and other malignant growths. The appendix will be an active feature of surgery, as some thousands of years are needed to complete its disappearance; but the children's children of the "appendicised" will be least liable to suffer. Its universal removal in childhood might eliminate it in five or six generations. Here is an opportunity for a new "cult."

In the class termed "Chemical Diseases," premature breakdowns will be greatly lessened in those who obey the laws, and treatment will be vastly more successful; but weakened

heredity—through artificial survival of the "unfit"—will make victory harder and harder.

Unquestionably, human life will be greatly lengthened, particularly that of the young and able-bodied; but many whom Nature would class as "unfit" will be kept alive to pass down a weak heredity; which will bring new and grave problems to the front. The science of eugenics, of human stirpiculture, will meet harder conditions than to-day. In the meantime, as has happened in physics in our time, discoveries may call for readjustment at any time.

HEALTH AND THE STATE

But a great deal of the health work of the future must be done by the Government. Already the medical profession has blazed the way for governments to save a million lives a year. Such diseases as malaria, yellow fever, and the plague should be largely checked. Our nation has stopped yellow fever. The National Drainage Association Congress at Baltimore had full support from Government representatives in its efforts at reclaiming swamp lands and ending malaria. Germ, as well as parasitic, diseases must largely rely on the state for preventive conquests. Medicine must become a power in the state. We have no typhoid antitoxin yet accepted; but, even if we had, prevention would still come first; the great majority of typhoid cases are due to inefficiency in destroying the germs coming from individual cases. State district official sterilizers would "pay" in lives and cash. England has a terrific labor in making India sanitary, overcoming the forces of sloth, superstition, and profound ignorance; but it has given poor support to the agents of the London School of Tropical Medicine in the field. What Ross had to endure for what he did is a disgrace. Our governmental hygienic mechanism is scattered about in a half-dozen departments; and the efforts of the American Medical Association to secure a department of health deserve public support.

DOES YOUR WORK DRIVE YOU?

HEALTH SUGGESTIONS ABOUT THE CHOICE AND CONDUCT OF BUSINESS

BY

DR. LUTHER H. GULICK

ONE of the great contrasts between men is the contrast between those who are interested in, or in love with, their work and those who do it merely from a sense of duty. One class drives the work, while the other class is driven by it. One is full of enthusiasm, and the other of the consciousness of effort and work. These two states of mind can be analyzed and, to a considerable degree one can choose which attitude one shall have for his life work.

When we give attention to anything, we do so from one of two motives: either the thing possesses some inherent attraction for us—draws us to it; or else we have exerted a deliberate push, as it were, upon our consciousness. If we are hungry, we give attention to a good dinner without the least feeling of effort. In the same spirit we attend to a good novel, once we have "got into the story," or to a charming girl, or to the latest stock reports. In these cases our own conscious part seems merely to let attention have its way; it goes straight to its object and stays. On the other hand, everyone knows how painful and exhausting may be the process of keeping the attention fastened to an object when there is none of this magnetic force in play; where all the control is a matter of moral resolution. It is safe to say that no other form of energy-expenditure is so costly as this. What we are spending here is the most central of our personal forces—will-power; and will-fatigue means a letting down of the whole personality to a lower level of efficiency.

A friend of mine, who at the age of seventeen was a soldier in the Civil War, told me of an order once given him to watch a certain hole in a wall, through which it was expected that

a Confederate spy would creep at any minute. He watched there for a whole hour (it seemed like twenty), keeping his eyes riveted on that hole, his gun cocked, every muscle tense, ready to shoot. He said that he did not remember ever having had so fatiguing an experience. He was not disturbed at the idea of shooting a man; he was well enough accustomed to that business. It was simply the attention-strain. He could not look away; he could not let his thought wander an instant. Yet there was nothing to hold him to his duty except will-power—every natural impulse had to be persistently whipped back.

It is interesting to set alongside of this the fact that a man can go hunting through autumn woods from morning till evening, walking like a cat among the dead leaves, ear and eye strained to the last degree, and come home at night actually fresher than when he went out and eager for another day of it. In a case like this, the attention is held just as taut as it was with the man who watched the hole in the wall. But the difference is that, in so far as will-power has a part to play here, that part is perfectly spontaneous. Attention needs no stays to hold it where it belongs. There is no conflict of opposing forces. Interest works toward the same end as will; they run parallel.

When will-power must do police-service, prodding to duty, it is quick to get tired. You have probably had the experience of trying to "do" some great art collection in a single visit — your only opportunity. For the first hour, or hour and a half, what an unqualified pleasure! Your attention fixes upon each object with a fresh zest; all your perceptions are quick and vivid. Then you approach what might be termed the point of æsthetic saturation. You cannot soak up any more. And now your pilgrimage ceases to be a self-propelled thing. Interest serves no longer as a magnet. Indifference rapidly turns into distaste, finally into agony. Nothing but sheer will-power will keep you going the round; and the expenditure of energy increases in a geometrical ratio. How sadly familiar a sight in any of the great European capitals is the harassed, nervous, distracted face of the typical tourist! Whirled at breakneck speed through the world's chief museums, from one master-product of human genius to another, he no longer is in possession of any faculties of true enjoyment or appreciation. It is will-power, acting in obedience to some abortive notion of self-improvement, that has brought things to this pass. "Education," forsooth! It is debauching.

Certain fatigue-tests, performed on school-children, have developed the fact that school-room gymnastics are the most fatiguing occupation of the school day. They are fatiguing not because they are muscularly exhausting — they are not that — but because they put such a strain upon attention-control. The whole sequence of exercises, as ordinarily gone through with, requires the utmost effort of concentration. The process has practically no inherent interest for the children — to many of them it is positively distasteful: they act under orders. Attention under orders has its uses, and great ones. We do not much admire a man who has no power of holding his mind to a distasteful subject, for many distasteful subjects may be important. We do not admire a man who cannot cheerfully shoulder an unwelcome responsibility when circumstances have brought it to him. This power must be acquired, must be available in emergency.

But whatever trained attention-control may produce in moments of crisis, where the only thing to do is to grit one's teeth and go ahead, be the cost what it may (it will be large, that is sure), this is not the mental temper in which the great, monumental achievements of humanity have been brought to pass. Results that are of slow development — that must be worked for, sacrificed for, prayed over — these have other things behind them than bare discipline of the will. The mood in which an uncongenial task must be carried through is not one which operates efficiently beyond a certain point. When a man in this mood succeeds in an undertaking — succeeds, that is to say, in some notable degree — he proves himself a brilliant exception. The natural comment is: "But how much more brilliant would have been his success if he had only been working at something that he loved!"

It is the difference between required school gymnastics and the playground. Five minutes of concentrated attention is more than can be forced out of children in their gymnastics, yet there is a standard of attention set and maintained in a baseball game among boys of fifteen — even younger — more exacting than any teacher would dream of setting up. And the attention here is indefinitely more protracted

than in the schoolroom. The fielder who relaxes for one single instant may lose his great chance. His judgments must be made with lightning rapidity; in running for a "fly" he strains every fibre of his body — and he must recover himself in a second and be ready for the next emergency.

The conclusion of the whole matter seems to be that when you do what you want to do, you do more and do it more effectively than when you do what you don't want to do. The man who drives his work counts for more, succeeds better, than the man who is driven by it. The more carefully one scrutinizes the great achievements of genius, the more clearly one perceives that, for the most part, they have been striven for and won under the inward stimulus of interest — love, ambition, curiosity — not under the prod of duty or necessity and the clubbing of will-power. The big work of the world is being done by the enthusiasts. Will-power working parallel with interest is tenfold more efficient than will-power working counter to interest. Think of the great explorers, the great inventors, the great composers, the great in any field whatever, and see how the point verifies itself. These men swept forward, ahead of all competitors, like the tidal wave that along certain coasts rushes in from the sea. They were carried over every obstacle by this great, buoyant wave of belief, of passionate enthusiasm. They counted no sacrifice too great because of the devotion that they had to the thing aimed at.

When a man is engaged in a work that he does not believe in, heart and soul, a work that does not draw him in a large sense, calling out the best efforts of which he is capable, he has not yet found his right sphere. The constant summoning of will-power — sense of duty, moral resolution, what-not — to help him, is a constant tax upon his central resources; it keeps up a state of mental mal-adjustment and prevents the most praiseworthy endeavors from resulting in anything like adequate fruition. Only when will-power and interest mutually reinforce each other, are great results to be expected.

There are, then, three practical suggestions:

(1) In so far as is possible, select work that is in accord with your own power. Enthusiasm is apt to come with the conscious use of power.

(2) Do more than duty demands, so that external compulsion will be quite lost sight of.

(3) Keep well. No single factor is so basal to vividness of life and work as is good health. I do not mean merely the absence of disease or disability, but that freshness that comes with good digestion, good sleep, and outdoor air.

ECONOMIC FORCES FOR BEAUTY

I

NON-ÆSTHETIC FORCES THAT MAKE FOR THE IMPROVEMENT OF CITIES

BY

ROLLIN LYNDE HARTT

THE brilliant new era upon which the embellishment of American cities is entering has this odd thing about it: commercial and mechanical forces, once foes of beauty, are now its champions. Not as the result of agitation but purely as the result of factors that boast no æsthetic aim, many a blemish is to disappear, many a glory to rise unbidden. We shall continue our campaign, but with a fresh hopefulness and a revived emphasis, shaping the course of good rather than checking the course of evil, since that less inviting task has been assumed, as we shall presently see, by a new battalion of allies.

A case in point — hardly momentous, yet convincing: For years the beautification reformers have howled against sky-signs. They have fulminated in "letters to the editor," bellowed in mass-meetings, organized themselves into leagues. They have shown how hideous are those monstrous advertisements and how they cancel the beauty of the

buildings they surmount. But the sky-signs remained. They even multiplied. As an advertising medium their value doubled as soon as the public had its attention called to them by such furious agitation.

Then, a year or so ago, there stepped forth a quiet little gentleman who dealt the sky-sign a blow to which it will owe its extinction. Representing a great fire insurance company, he informed his clients that henceforth all owners of sky-signs must pay an increased premium, for buildings thus crowned greatly increased the difficulties of fire-fighting. It is through the roof that a fire is "ventilated"; if the firemen cannot reach the roof, they cannot give the blaze its quickest way out. And so, within the limits of his jurisdiction, this matter-of-fact insurance man has accomplished more than all the reformers. In his city, many sky-signs have come down ; the rest will follow when their leases expire. Meanwhile, as if a single knockout were insufficient, comes word from the architects, who complain that a sky-sign acts as a huge sail and that the resulting wind-strain injures the roof. In time, one may reasonably hope, all sky-signs will have vanished.

As for ordinary bill-boards, you may term them mere incidents in the rebuilding of cities. We shall be quit of them when the vacant lots are built up and when bare side walls are concealed by tall structures adjoining. Possibly the nuisance will abate long before that. Highly trained advertising agents are now common, and no highly trained advertising agent will long remain blind to the inefficiency of whole rows of bill-boards. In any case, the advertisers will not. My morning trolley-car takes me through a half-built-up avenue whose two sides are solid masses of bill-boards for an eighth of a mile. Can I read them? Only with great difficulty. The speed of the car piles one impression upon another so rapidly that at this moment I can recall only one or two of the signs that I have seen daily for three years. Some day the men who paid good dollars to have them erected will see what a waste they permitted. When they recant, it will not be because they love beauty more than money, but because they love money more than folly.

ELEVATED RAILROADS ARE DOOMED

Moreover, owing to reasons quite apart from æsthetics, it is probable that no American city will again be invaded by the elevated railway. Unless, as in New York, they go through rock, subways are now built with unprecedented ease and without interrupting surface traffic. Bostonians walking through Washington Street have been scarcely aware of the immense mining operations in progress beneath their feet. And the new type of subway, with its shell of reinforced concrete, becomes stronger as the centuries pass. When the last elevated structure shall have gone to the scrap-heap, these imperishable tubes will have changed only for the better. But what especially favors their adoption, in preference to the overhead horror, is a series of recent cases in court. There is now precedent, established in Massachusetts, for mulcting an elevated railway company to the extent of hundreds of thousands of dollars for damages to real estate. Future "El" schemes, if any assert themselves, will have this financial menace to face at the outset.

CLEANLINESS FOR STONE FRONTS

Almost trivial, at first glance, yet wondrously far-reaching in its effects, is the new sand-blast device for cleaning the fronts of buildings. Blowing dry sand at this pile of stone here and that pile of stone yonder seems a small affair, and so it would be but for its influence upon architecture and upon the smoke nuisance. Already it has enabled the builders to enlarge a structure without incoherence of design. Formerly the added portions would always, by their very newness, stand out distinct from the older portions, and the architects were accustomed to treat the addition as a second building. A famous hotel, for instance, boasts four styles of architecture. To-day, however, the designer adheres to the style already adopted, confident that, thanks to the sand-blast, the new stone will be indistinguishable from the old and that the keenest scrutiny will not detect the seam where the work of 1890 leaves off and the work of 1907 begins. Nor is this the best result. Instead of the vague growl with which a property-holder has hitherto berated the smoke nuisance, hear his loud and specific whoop of rage ! Once he objected to darkened sky and contaminated air; at present he curses the smoke for so soon begriming the walls that he paid the sand-blast people a round sum to cleanse. The smoke nuisance hits him not only on the optic nerve, but also on that most sensitive

of organs, the pocket nerve. Eventually he will become a lively advocate of atmospheric cleanliness. We need these disgruntled agitators, especially since, for the sake of light, we have gone in so extensively for cream-colored brick — which is beautiful when clean but dismal and hideous when soiled.

Happily, the steam railroads, whence comes a disgusting percentage of a city's smoke, have begun to electrify their suburban lines, actuated by motives purely material. A majority of their locomotives will thus cease to foul the air, and in time the electric engine may entirely supersede its steam-driven prototype.

THE END OF THE TROLLEY-POLE

Equal plausibility attends speculation regarding telegraph poles and wires for telegraphic, telephonic, and electric-light service. Partly as a matter of good housekeeping and partly in the interest of the fire-fighters, we have put a good share of these wires underground, where they belong. Considering the romantic upheaval in the electric world, who knows but that all need for poles and wires in our streets may not soon be obviated? What with wireless telegraphy, wireless telephony, and the wireless transmission of power (with the whole wireless wonder-working still in its incipiency), it seems no fantastic prophecy to forecast a wireless, poleless, city thoroughfare — the result not of administrative, but of engineering progress.

A further blemish will vanish when iron and steel give place to reinforced concrete for railroad bridges, as seems far from unlikely. Just now my trolley-car takes me well around Robin Hood's barn because an eyesore of a trestle has been made unsafe by the hot blast from locomotive funnels that have passed beneath it. New girders are being substituted for the injured ones at no small expense. Had the structure been built of concrete, the trouble would all have been saved (as well as the expense of frequent repainting) and what is now a blot on the city's attractiveness might have displayed rare grace and dignity of form, and have endured as a permanent embodiment of beauty. The use of concrete as a building material increases yearly. Better than iron and steel, it leaves no excuse for the old-fashioned trussed bridge.

Coming now to the positive, constructive side of the movement toward beauty, note how the street gains color — how it gains it as a by-product of non-æsthetic forces. It is from no artistic motive that Hebrews heap flowers upon sidewalk stands and Greeks pile up gorgeous masses of fruit in sidewalk stalls; nor is the new method of window-dressing more than commercial in impulse, though it contrives exquisite color-schemes, at once radiant and harmonious. Meanwhile, to mechanical and commercial ingenuity we owe the automobile, whose gorgeous hues and gleaming brass-work add a note of gaiety to the pageant of traffic. Merely as an advertising measure, one man introduced a tastefully decorated delivery wagon for his wares, and the object-lesson is having its effect upon firms that seek ways to give distinction to their business. In New York the mounted policeman has recently been made to contribute his share of picturesqueness; instead of the ungainly helmet, he wears a jaunty military cap, and instead of the long coat he wears a smart jacket with ornamental braid. This is a step toward re-costuming our public servants and making patrolmen, letter-carriers, messengers, and the other non-military uniform wearers as showy and decorative as those that delight the eye abroad. We have more need of such gaiety than Europe has, for we lack that valiant helper of street-life's gorgeousness, a great standing army. We also lack, for the most part, the picturesque presence of priests and nuns. The more inviting, then, the suggestion for taking our uniformed public servants out of their present tawdry habiliments and putting them into attractive ones. Is tradition too rigid? Not when we can change our military uniform from historic blue to olive drab and even design new toggery for our sailors.

But the larger and more impressive change, the change that is giving our cities increasing grandeur, pertains to architecture and rests upon financial combinations. Instead of doing countless little things individually, we are doing big things by grouping our resources. Down comes a row of small shops to make room for an immense building, sometimes covering an entire city square. Down come a dozen small dwellings to make room for a huge apartment-house. Without intending reform, this concentration of capital makes for an amazing æsthetic advance. It abolishes the old incongruity and disorder, allowing a single style of architecture to replace the former chaos

over a considerable frontage. Besides, the riot of gilded signs, which so disfigure the upper stories of small buildings, is no longer permitted.

Abroad, the dignity of the street springs largely from precisely this restraint, though the upper stories keep free of signs only because those upper stories are flats. Here we have been hanging signs everywhere — none too rationally. Not a tenth of them can be read by one pedestrian in forty. In our bustling thoroughfares you do not turn your gaze upward ; if you did, you would get bumped into ; and yet those staring letters become part of the picture, to the ruin of the general effect. No amount of agitation can remove them. A sort of mystic faith in the power of big signs, whether read or unread, makes their owners cherish them with a tenderly unreasoning loyalty. A drug-store covers its building with a hideous catalogue of its entire pharmacopœa. A wholesale grocery store bulletins its wares from foundation to cornice. A coat-presser in the fourth story must blazon his name, which only three people in a thousand ever see. This comes partly from vanity, but more largely from a mistaken theory of advertising — and not all your eloquence will prevail against it. When, however, a syndicate of capitalists assumes control, their monumental edifice is above such disfigurement. Neat lettering in windows and a directory in the doorway serve their practical purpose without violence to beauty.

THE COMING OF THE ARCADE

There lies before me as I write, a pamphlet— a volume, almost — "Exhibitive of the Attractions of the Cleveland Arcade." Intended as a lure to tenants, it becomes a spirited epistle to investors and a very enlightening suggestion to builders. At the same time, it shows what may become of the little shops, which are no contribution to municipal splendor. London has many such arcades, but to see the idea carried out on a heroic scale you must visit the Galleria Umberto in Naples. Take a whole city square ; let two highways intersect it, dividing it into four smaller squares ; cover the highways with glass and pave them with smooth stones for pedestrians only ; then run galleries along the upper stories beneath the glazed roof. Thus you get a maximum of frontage, a maximum of light, and, within the Galleria, protection against wind and rain. Moreover, half the frontage, with its confusion of gilded signs and wares on show, is concealed from the street, while the immense structure itself takes on a superb architectural magnificence. Commercially, it becomes a glorified Oriental bazaar; æsthetically, a triumph of sane and pleasing design. What Naples has accomplished so vastly and Cleveland so profitably, though within limited scope, any American city can repeat.

But while concentrated capital has made for broader architectural effects — broader in the literal as well as the figurative sense, broader in mass as well as in spirit — it has also made for loftiness. In both senses of the word ? Not always. Many a skyscraper is the result of bad theory and worse practice. On the other hand, the latest developments are superb. Meanwhile there has come a phenomenon unprecedented in the entire history of building — the majestic, heaven-scaling, absolutely stupendous tower. The advertising instinct, mingling with a desire to get countless rentals from a tiny patch of earth, gives the world such structures as it had never dreamed of seeing. The Flatiron Building, the Times Building, the Singer Building, and the Metropolitan Life tower—these in New York set an example to great cities throughout Christendom. Faulty in conception though some of them are, they mark the beginning of a new era of awe-inspiring beauty. Soon we shall learn to fashion the perfect tower, as certain of our men now fashion the perfect skyscraper. When that is achieved, the amazing city, so splendid as seen from within, will take on an unprecedented glory as seen from without. Approach to it will make the face light up. And, on late afternoons in winter, fairy pillars of light will gleam from afar, almost as if hanging in air, with innumerable glowing windows that spell out the all but incredibly superb design. If no poet sings their praise it will be for the same reason that no poet worthy the name has dared to celebrate Niagara.

THE PASSING OF THE CHURCH SPIRE

Now and then we hear the wail that all this magic upthrust has overtopped the church spires. So it has. Men who still reckon themselves youngsters can recall the days when Trinity's spire was the unrivaled architectural glory of New York City. Now it is scarcely visible. You might walk past Trinity Church a dozen times without noticing

its spire. Sunk in a narrow well, it counts for nothing. This has its pathetic side, to be sure ; yet, meanwhile, a new form of ecclesiastical architecture has been forced into acceptance. Dr. Parkhurst's church in Madison Square is now rebuilt in Italian Romanesque, the style that best adapts itself to metropolitan conditions. It forswears height, impresses by mass, and delights by grace and dignity. Though no spire points heavenward, the very lowness of the structure bespeaks other-worldliness. When neighboring buildings rise to a prodigious altitude in quest of gain, this cross-crowned sanctuary knows no sordid object. And very beautiful it is, with its pillared porch, its low dome, and its fine solidity of wall and roof and ornate cornice. You forgive the reign of "monstrosities" half of its æsthetic crimes for having forced a return to this noble type of church. For a return, unmistakably, we have here. If the Gothic takes us back to the Middle Ages, the Romanesque takes us back to the early Christian era, or nearly so.

FUTURE AMERICAN CATHEDRALS

Yet it is not in the Romanesque temple that you must seek the finest product or by-product of the wealth heaped up by modern commercialism. Seek it instead in the cathedral. As a nation, we have long been rich enough to build, epically at Washington ; state by state and city by city, we have long poured out our treasure to create creditable works in marble and hewn stone ; but never till of late have we been rich enough individually for the erection of colossal churches. And it is the overplus of individual wealth, amazingly massed together, that promises a marvelous group of cathedrals, surpassing in certain respects the grandest in Europe. In New York, the vast pile dedicated to St. John the Divine is slowly rising. In Boston a cathedral will soon be begun — perhaps, like Notre Dame de Paris, upon an island in the river. Another will loom majestic over Denver, a fourth will adorn the national capital. In days to come, every great American city will be similarly embellished.

And while America has never before been equal to this stately task, no era before ours has been so supremely equal to it. What took centuries in Europe will take but a decade here — less, perhaps. Hence an æsthetic gain. We shall build in obedience to a single design by a single architect, whereas they of the mediæval epoch changed the style of the cathedral with each successive metamorphosis of taste. Thus they have given us a nave in the Norman manner, a clerestory in the early English, an apse in the Decorated Gothic, and soaring towers in the Perpendicular. Often they have left their work unfinished, to remain so or be subsequently meddled with by bunglers. Notre Dame is still without the spires its architect intended, while the ground all about it has been filled in till the basement story is concealed ; consequently, the whole fabric gives an impression of weight instead of airy lightness. Westminster Abbey is crowned with mongrel towers added by Sir Christopher Wren, who had mastered Renaissance designing but not Gothic. Furthermore, all of the old cathedrals have suffered "restoration," sometimes at the hands of unwitting vandals. Ours, in centuries to come, will be mended less ruthlessly, thanks to that instrument of architectural perpetuity, the camera. No need of conjecture or invention, when a photograph shows what was anciently the form of each corbel, capital, final, and flowered tracery. Restoration will reproduce, not desecrate.

Thus far, the projects for cathedral building represent chiefly the enthusisam of the Episcopalians. Eventually the Catholics will rival them. Nothing is more inspiring than the latest developments in Catholic architecture. What the Roman Church accomplished a quarter of a century ago at St. Patrick's (on Fifth Avenue) and has not since repeated, it will do again in a score of American cities. Though such Christian temples, whether Anglican or Roman, will lack age and lack history, they will not lack beauty. And in centuries to come they will lack neither age nor history. Time will have been kinder to them than it has been to the European fanes, and their history, though less romantic, will be decidedly more decent.

So these, in sum, are the things that mechanical and commercial forces — and forces only secondarily æsthetic — have achieved or promised; a city purged of many a blemish, a city more ordered and more dignified, a city of more joyous streets, a city made splendid with towers secular and monuments ecclesiastical. Never before had we such ground for courage in our struggle for fine accomplishment.

THE AMERICAN MUSEUM OF NATURAL HISTORY IN NEW YORK

A GREAT AMERICAN MUSEUM

HOW THE AMERICAN MUSEUM OF NATURAL HISTORY IS BECOMING A FAR-REACHING EDUCATIONAL INSTITUTION UNDER THE BENEFACTIONS OF THE LATE MORRIS K. JESUP

BY

HERMON C. BUMPUS

(THE DIRECTOR OF THE MUSEUM)

NATURAL history museums, originally asylums for the declining years of things of little use, are changing their functions and promise to become, if they have not already become, active centres of scientific work, important agents of education, and recognized standards of the culture of the community in which they are located. While continuing to conserve and care for scientific collections, they have developed a zeal to explore the unknown and to demonstrate adequately the essential facts of nature. They are something more than repositories, since they devote a considerable portion of their energy to public instruction; and they are more than academic institutions because, although giving instruction, they insist that their officers shall, by their scientific observations, regularly contribute to the fund of human knowledge.

They are in general favor; otherwise they would not be patronized as they are by the public; municipalities would not provide for their support, and business men would not contribute time and money toward their proper maintenance. The provincial cities of Europe are appropriating generously for the establishment of museums, and museums are springing up even in India, Australia, New Zealand, and the Central and South American republics. Within five years, at least fifty million dollars have been devoted to museums in the United States, and even more significant is the fact that men of affairs like J. Pierpont Morgan, Marshall Field, Andrew Carnegie, and others, have thought it worth while to give their

personal attention to the establishment and development of these institutions. The late Morris K. Jesup was for twenty-seven years the president of the American Museum and his devotion, generosity, and good judgment have given a distinctive character to the institution that has grown up under his direction.

What is the reason for this growing in favor? It is not far to seek. The museums have so modified their general methods of administration that they are now conceded to perform a function, and to be of use. In short, they are doing something.

Dreary series of stuffed animals are giving place to realistic groups in an out-of-doors atmosphere. The pedantry of scientific labels is being silenced. Models of exquisite workmanship have succeeded noisome alcoholics, and exhibition halls have become bright, airy, cleanly, and architecturally attractive. The idea that a museum should exist in order that certain collections may be exhibited has been found fallacious. It assumed that the specimen was of more value than the visitor; that the institution existed for things rather than for beings. An institution controlled by this idea could have no definite policy, no ultimate

AN ESKIMO FIGURE IN THE AMERICAN MUSEUM OF NATURAL HISTORY
Showing the implements and methods used in fishing through the ice

end. It would become simply the creature of accident.

When, at the American Museum of Natural History, it was perceived that the interest in birds had passed beyond the stage where stuffed specimens were of value, plans were made to adapt the exhibition series to the new requirements, and "habitat groups," representing birds as they occur, were begun. The selection of a proper subject for such groups was a matter of careful study. A trained curator decided that Pelican Island, in Florida, should first receive attention. An artist and a photographer were to be found who could make the proper field studies. Skilled artisans were engaged who should collect birds of proper age and plumage and prepare models of characteristic vegetable growth. These arrangements had to be made in advance and when those entrusted with the work were a thousand miles from the field of operation, but all were brought to the particular spot at the proper moment. The Pelican Group owes its successful treatment to the fact that the curator, artists, artisans, and preparators formed practically a physiological unit in its preparation

There was a time when curators felt that an intelligible label was an administrative blunder and that the visitor should be made humble through a conviction of personal ignorance. A special effort is now made to provide inviting reading-matter; reference is made to

A MAGNIFIED MODEL OF A MOSQUITO
To show how it carries the germs of disease

THE PELICAN GROUP
In the foreground are stuffed birds and artificial plants. The background is a painting. The grouping is arranged from data and photographs made on the Indian River, Florida

A TRAVELING EXHIBIT

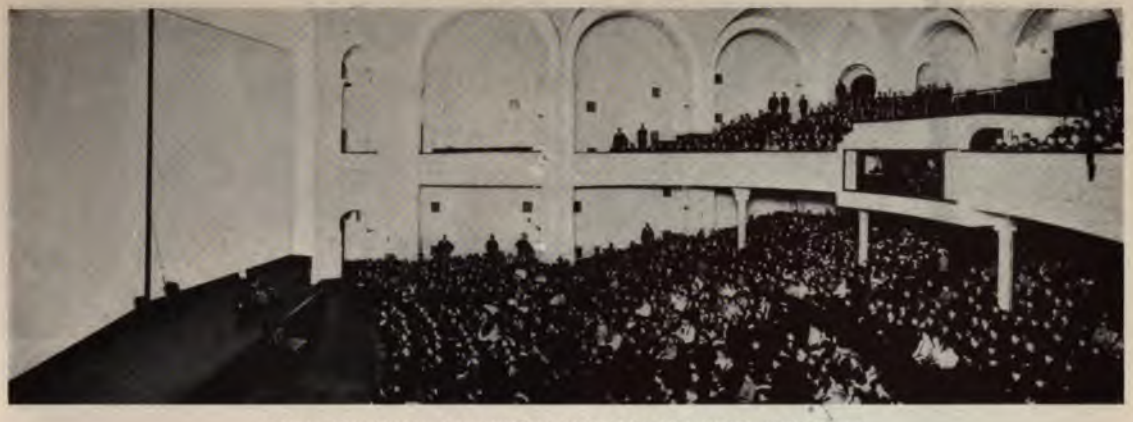
A GLASS MODEL OF A SEA-ANEMONE

the museum's library; and articles from the popular magazines, placed near the exhibits, arrest attention.

Many still remember the exhibition of what was euphemistically called "Spirit Specimens." This marked the glass-jar epoch of museum development. Few museum officers had the courage to open these receptacles, and few

A MODEL OF A DINOSAUR

The disjointed bones were formerly exhibited but failed to arouse interest



ONE OF THE LECTURE ROOMS OF THE MUSEUM
In which 46,000 school children attended lectures in 1907

visitors derived benefit from inspecting distorted images of disintegrating tissue. If soft-bodied animals, like the anemone, jelly-fish, etc., are to be used for purposes of instruction, a poorly preserved alcoholic specimen does not suffice. It is now necessary that the preparator should seek these animals in their natural environment. He must then gently narcotize them while they are expanded and plunge them into some of the well-known fluids that will instantly kill before they can contract and injure their delicate fabric. It is at present impossible to preserve the natural colors of these delicate marine forms, and the specimen, therefore, must be accompanied by a model in colored glass (which may take months to prepare), giving a truthful impression of the structure and appearance of the form when alive. All of this requires not only time and patience but special training and exceptional skill.

Those who have had the pleasure of looking through the clear water of the tropical seas know of the wealth of life that occurs on the sea-bottom. Plans are now under way to install a coral reef in the Museum, so that

THE LOUBAT HALL OF MEXICAN ARCHÆOLOGY
Arranged logically in a well-lighted room, with each object labeled in plain, untechnical English

A POLAR BEAR MOUNTED IN THE OLD-FASHIONED WAY

The long rows of poorly stuffed animals of different species and from different lands which filled the exhibition cases failed to attract or instruct visitors

A POLAR BEAR MOUNTED IN THE NEW WAY

Which shows the animal in a natural attitude in its natural surroundings

TRAVELING EXHIBITS STORED IN THE MUSEUM
They reached 725,000 children in 1907

THE JESUP COLLECTION OF NORTH AMERICAN WOODS
Each specimen with photographs of the leaves

the people of New York may better understand the extraordinary association of marine animals that combine to produce these sub-marine formations, and properly enjoy the beautiful harmony of color that makes a lasting impression upon those who have taken a ride in the glass-bottom boats of the Bahama fisherman.

Before this coral reef can be installed, collectors must be sent to the South; boats and heavy gearing must be secured; the corals and associated forms must be collected, preserved, and transported to the Museum. Finally, part of one of the floors will be removed, a plate of glass will be inserted, the reef will be reconstructed, and the visitor will look through the glass and see the marine picture as it actually exists.

The fact that a museum possesses thousands

A CLASS OF SCHOOL CHILDREN IN THE MUSEUM

CHAIRS FOR THE FREE USE OF OLD AND YOUNG

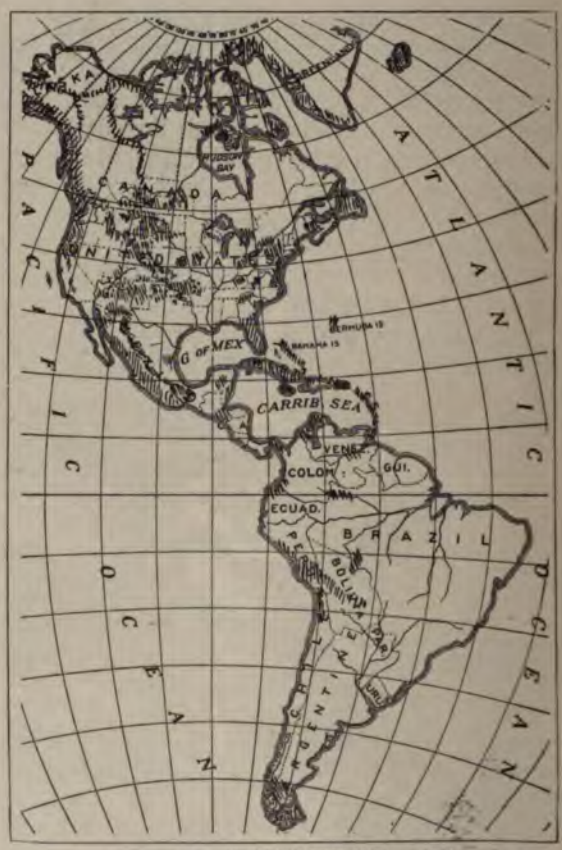
CIRCULATING EXHIBITS STARTING FROM THE MUSEUM

A MUSEUM EXPLORER WITH A LOAD OF SPECIMENS

of specimens of a particular kind should not result in this material occupying more space that it is fairly entitled to — indeed, the general plan of apportionment of space is the result of a carefully thought-out scheme, a scheme which finally results in a well-rounded and symmetrical whole. It is like the make-up of a text-book: each fundamental subject is allotted a space and must be cut down or further expanded to fit this allotment.

THE MODERN EXHIBITION HALL

The function of the exhibition hall is the intelligible exposition of ideas. It is the practical elucidation of underlying principles. It is the forceful illustration of fact. Thus, a good museum officer does not devote himself to the installation of specimens, but rather to the use of specimens for the purposes of the instillation of knowledge. A diamond exhibited as a mineral — as a crystal of carbon — may fail as an agent of instruction; but, exhibited as a gem, it attracts attention and visitors will read much before passing on. Prehistoric monsters when displayed as disjointed fragments fail to arouse interest, but when faithfully reproduced they stimulate an interest in the history of the past. Potsherds and stone arrowheads are, in themselves, of indifferent educational value, but if they can be used to bring out salient differences in the character



THE TRAIL OF MUSEUM EXPLORERS
The shaded portions show where expeditions from the American Museum of Natural History have made investigations

of primitive people, then their use is justifiable. Unless an installation tells something and, moreover, something of interest to human beings, there is no particular reason for its existence.

This brings up another matter, namely, the proper regard of museum men for the way in which other people think. A specimen may fail utterly to instruct when used in one way, and, when used in another, it may reach a throng. For example, when the model of a mosquito merely illustrates the facts of morphology, it attracts little attention; but when it is exhibited as an agent in the spread of disease, it becomes of universal interest. The average person is not especially interested in spears, bows, arrows, etc., but when these are used to illustrate the activities of a people, then their story is listened to. It is largely by making concessions to the condition and habit of mind of the average visitor and by the exercise of discretion in the selection of the material exhibited that the modern museum has won its place in general esteem.

Moreover, the scope of the activity of museums has been broadened until it now embraces sciences formerly considered quite beyond their jurisdiction. For example, the industrial side of our native trees has quite as much interest as their classification, and an effort to supply an adequate illustration of the lumber industry and of the disastrous results of deforestation is, perhaps, quite as commendable as striving to possess and exhibit every known variety of some obscure shrub. The visitor is entitled to something more than a mere exhibition of the cotton-boll weevil. He should know about its ravages and the way in which it has affected the cotton industry. The San José scale has an interest to the resident of New York, not because it is one of the *coccidæ*, but because it is destructive to our shade and fruit trees.

There is a growing feeling that more attention should be paid to applied sciences, and there is ample justification for this feeling. The sources of copper supply, the modes of mining, the amounts consumed, and the use of copper in the arts are matters of general human interest. The museum does not adequately treat of copper when it merely exhibits samples from different localities, with unintelligible chemical symbols and crystallographic formulæ.

Other forms of museum activity, such as lectures, conferences, temporary exhibits, the coöperation with libraries, circulating collections, popular publications, and other instruments to reach the people, should not be forgotten.

Though many of the large museums of Europe are unprovided with assembly halls, American museums have long recognized the educational value of the scientific lecture. Even if the lectures delivered in these institutions may occasionally lack professional form and rhetorical grace, they give the public an opportunity of seeing men who are active in scientific work and of being directly introduced to the work that these men are doing.

A year ago on Commander Peary's return from the North, thirty thousand people gathered to listen to his thrilling tale of adventure. Of these, I believe, a large proportion went away permanently interested in Arctic regions and in the problems of Arctic exploration.

The demand on the part of the people for individual instruction has resulted in the appointment at the American Museum of instructors whose services are gratuitous. Anyone coming to the institution can (upon making request at the Bureau of Information) receive the *entrée* into any department. A mother, by appointment, may bring her child and leave it with an instructor who will devote himself to the giving of wholesome information in such branches of science as may be required. Although this system has been in operation more than a year, there has been no abuse of the privilege, and several thousand adults and children have profited by the innovation.

There are many subjects of general and passing interest that the public museum can undertake successfully only when assisted by the coöperation of other organizations. This has resulted in the holding of temporary exhibits, always, of course, appropriate to a museum of this kind. The tuberculosis exhibition held in 1906 reached 100,000 people who, probably, would not otherwise have come to the institution. The exhibition, in 1907, of safety devices has led to the establishment of a permanent museum devoted to this important subject. At the present time plans are being made to have a temporary exhibit designed to illustrate the results of the congestion of the population of New York, an exhibit in which a score of different organizations will unite. In all of these temporary efforts the lecture halls as well as the exhibition halls are brought into operation.

Few citizens of New York realize that the collections of the American Museum are doing their educational work elsewhere than at the Museum building. Within the past three years a system of circulating collections has been developed until there are now 325 schools and libraries in Greater New York receiving collections which directly assist the teachers in their various courses of instruction. The preparation of these collections is no small matter, and their delivery and transfer from school to school require the services of a competent staff. The Museum has been obliged to purchase an electric delivery wagon that is constantly occupied in this work. When it is realized that one of these small collections in less than a year may be examined by 10,000 school children (and there are now 450 of these collections available for circulation), the importance of this educational instrument becomes apparent. In 1907 the circulating collections of the Museum reached 725,000 children, and pressure brought upon the Museum by other cities has resulted in the extension of the work beyond the limits of New York City. The public schools are also reached by afternoon lectures designed to supplement the class-room work and to aid students who come to the Museum by appointment and accompanied by their teachers. More than 30,000 pupils attended these lectures in 1907. It is a fond hope that the Museum may at some time extend this work to adults, by placing in various clubs, associations, and waiting-rooms material of current interest that may change idle periods into moments of profit. For example, when one is waiting five or ten minutes for a train he could examine a relief map of the Isthmus of Panama, consult a few condensed reports upon the progress of the Canal, or, perhaps, view a series of photographs showing the work actually going on, all presenting the matter of this important piece of construction in such a way that the ordinary man could feel that he was a little better informed as a result of the few moments spent upon the subject.

THE MUSEUM'S WORK FOR SCIENCE

Besides the obligations of the museum to the people, the museum has a distinct obligation to itself. The man who never learns is a dead teacher. The museum that is not actively and ambitiously contributing to science is a poor instructor. Not long ago, before knowledge began to develop along intensive lines, when men could acquire a general understanding of science, when learned societies and academies flourished and when specialists were unknown, the work of museum men was at least intelligible to museum visitors, and the simple things they then worked upon were of general interest. With the rapid progress of science, much of this has changed, No one can now boast of a general education. Indeed, even the average man of science has hardly a general understanding of those branches not directly related to his particular line of work. It is an age of specialists in technical knowledge. The learned societies have become loose confederations of disjoined sections, and their deliberations are often quite beyond the comprehension of the public. It is, then, only in obedience to the conditions of the times that the modern museum makes a fundamental distinction between its direct efforts toward the improvement of the people and its direct efforts toward the encouragement of research. The modern museum must, therefore, carefully reserve thousands of specimens that are of interest only to specialists, and must maintain a scientific faculty or staff, the researches of which it is its purpose to sustain, for through the worth of its scientific publications a museum is judged by the scientific world. It is estimated that during the past year the American Museum of Natural History spent $80,000 exclusively in scientific work. The purely scientific publications of this institution for the year 1907 comprise an octavo volume containing thirty-six articles, aggregating more than twelve hundred pages, a series of illustrated memoirs, in quarto form, of approximately a thousand pages, and many special papers based upon work prepared by those affiliated with the Museum and upon material in the Museum, published in an unofficial way.

Moreover, the spirt of investigation does not find its only expression in the laboratory and at the desk, for a museum must also assume the responsibility of placing expeditions in the field and of exploring unknown regions. Areas actually explored by representatives of the American Museum are shown on the accompanying map, and enable one to estimate, in a general way, the range of sources from which a modern museum derives its material and the diversity in the contributions to the fund of human knowledge that must result from such extensive scientific activity.

HUGHES AND WHAT HE STANDS FOR

THE CAREER, PERSONALITY, AND PLATFORM OF THE GOVERNOR OF NEW YORK

BY

A NEWSPAPER MAN WHO KNOWS HIM.

GOVERNOR HUGHES has been a busy lawyer, not a platform orator; a private citizen, not a candidate for office; even as Governor he has discussed only his official duties. His silence until recently upon what are called "national issues" has been due to the absence of what seemed to him a proper occasion for their discussion.

Yet a search of his public speeches during the last fifteen months would have been rewarded. For instance, a dozen times he has paid hearty tribute to the character, administration, and policies of President Roosevelt. There is no fundamental disharmony in the beliefs of Governor Hughes and of President Roosevelt. In his speech of acceptance at the Republican Club in New York on October 3, 1906, Governor Hughes glowingly commended the President, "our great leader," alluded to the "record of established reforms" achieved under his administration, and specifically referred to "the activities of Congress in the interest of all of the people" as having been "attested by the passage of the Railroad Rate Act, the Meat Inspection Act, the Pure Food Act, and the Employers' Liability Act."

Federal regulation of interstate commerce he has taken for granted. "Congress has complete authority over the interstate commerce, and the state cannot interfere with the exercise of its prerogatives; and it is desirable that the Federal authority shall be fully exercised until every abuse incident to interstate commerce is ended." This is the way that he spoke of the matter before the Utica Chamber of Commerce on April 2, 1907. His views toward those who violate the written statutes and the laws of fair play in the name of "business" are equally emphatic. Before the Buffalo Chamber of Commerce, for example, he spoke of the "enemies of our Republic" as being, first, "the unscrupulous who have no sympathy with democratic ideals, and who, by their abuse of the privileges obtained from the state and by their cynical indifference to public obligations, bring law and Government into contempt"; and, second, "those who seek profit in unprincipled agitation. The second thrive upon the evils created by the first." And at the Jamestown Exposition on July 4th last, alluding again to these two classes of public enemies, and especially to the legislative hand-servants of the first, "who speak the language of conservatism but whose underlying purpose, only thinly veiled, is to protect those who have betrayed the public and to prevent remedial action," he said:

"We may believe that the people will not be deceived by either. With extraordinary unanimity they have supported President Roosevelt in his courageous and vigorous administration because they have believed that he voiced the sentiments of fair play. It is that sentiment more than any other that dominates American life."

On January 31st, just before this was written, Governor Hughes made a speech before the Republican Club, practically accepting the candidacy for the Republican Presidential nomination, and declaring his position on the major issues of national import. This speech amply confirms the summary gathered from his previous speeches. It leaves no possible doubt of his substantial endorsement of the distinctive policies of the Republican party in general and of the Roosevelt administration in particular.

Socialism he declares un-American; he does not believe in Government ownership of railroads; he does believe in effective regulation, by the suitable agencies of Government, state and Federal — each within its own sphere. The Sherman anti-trust act he believes should be clarified and made more explicit; and, far from favoring any mitigation of the Government's rigorous prosecution of corporation offenders, Governor Hughes would punish, not by fines which mulct innocent stockholders, but

by imprisonment of the officials actually responsible. Responsibility should, he holds, be more clearly defined, and the burden of conviction thrown upon juries in the courts of criminal jurisdiction.

As for the tariff, upon which Mr. Hughes had not before publicly expressed himself, he said in this speech:

"I believe in a protective tariff. It is an established policy . . . essential to the interests of our wage-earners, in that it makes possible the payment of wages on the scale to which we are accustomed and thus maintains our American standards of living.

"But I do not believe in making this policy a cover for exorbitant rates or for obtaining special privileges from the Government which are not based upon consideration of the general welfare. I believe that the tariff should be revised. And in order to effect whatever readjustment may be necessary to make the tariff schedules consistent with the principles underlying the protective policy, I favor the appointment of an expert commission, so that the facts may be ascertained without delay and that Congress may dispose of the matter in the fairest possible manner."

The Governor's methods and mental temperament could not be more clearly illustrated than in this paragraph from his speech:

"I do not believe in arbitrary action. We desire prosperity. We are anxious that there should be fair opportunities for all the workers of the land, for the extension of industry and commerce, and that there should be the widest diffusion of blessings among a contented people.

"To attain these ends, the rule of the people must be a rule of reason and every effort must be dominated by the sense of justice. We must be patient, impartial, and thorough; investigation must precede action; good-will must displace passion; and the sole motive must be to seek the truth and to do the right."

So far as he has made his beliefs public, then, he stands for the Government regulation of the railroads, an active prosecution of malefactors of all kinds, and also a revision of the tariff. His public life, so far, is the best criterion to judge how he would go about these tasks.

A MAN WHO TAKES HIS PLEDGES LITERALLY

When Governor Hughes was invited to become counsel for the legislative committee to investigate the gas and electric lighting companies of New York, in 1905, he at first declined. He was busy with a lucrative and growing law practice; he was devoted to his family, including his aged parents; he had no political interests, associations, or ambitions except that he was a member of the Republican Club of New York City. The proposition involved sacrifices which he did not feel called upon to make; it reeked, as he and most other people saw it in the outlook, with the atmosphere of petty politics, to him both unfamiliar and exceedingly distasteful. The committee, he said to himself and to them, must find somebody else for the job. Convinced at last that they were after "the truth and the whole truth," and that he would be not only free, but expected, to pursue the inquiry whithersoever it might lead, he took the committee's retainer. When, a few months later, it was announced that he was to be counsel for the life-insurance investigation, the public knew what manner of investigation it would be; though no one expected the momentous consequences, financial, social, and political, that were to ensue.

When the Republican State Convention nominated him for Governor, he again felt the call of public duty and accepted, with this pledge: "To do my duty according to my conscience. If elected, it will be my ambition to give the state efficient and honorable administration, free from taint of bossism or of servitude to any private interest."

These were fine words, and the convention of organization politicians cheered them rapturously. No man there doubted that the words were sincere — as sincere as such words ever have been in the mouth of a candidate for office. How brutally sincere they would actually prove to be, probably few men in that convention imagined.

AN AMATEUR IN POLITICS

There was a general misconception of the relations between Hughes and the politicians during the first winter of his term. He gained the name of "the man of mystery"; and, save among his closest friends, it was felt that he was unapproachable, cold, and even contemptuous toward those practical legislators. This impression is passing away. He came into political life suddenly, without acquaintance with any of these men or with the legitimate political customs. He knew most of the men with whom he had now to deal, largely through the newspapers. He had to learn whom he could trust, and the beginnings of

some of these acquaintances were, it must be admitted, under conditions hardly propitious.

On the other hand, the politicians had had no opportunity to know or to understand him. In general, they regarded him either as a sort of babe-in-the-woods who must be tolerated and humored for a couple of years and prevented from doing, in his ignorance, more than the inevitable amount of damage; or as a dangerous theorist, a kind of child-with-a-dynamite-bomb, who must be thwarted and straight-jacketed at all costs. Odell, the practical machine-leader, they could understand, deal with, and obey or destroy after the manner of the game. Higgins, as honest a man as ever drew breath, while not always tractable, had measured all important actions by "the good of the party," after the orthodox fashion. They could understand him. But "this man Hughes," protesting himself a Republican, early adopted standards incompatible with theirs. He did not respond to their arguments in matters of appointments and the "leaders" found themselves no longer able to "deliver the goods" for their followers. Hughes gave the choicest bits of patronage to men unknown to the party counsels, or to men notoriously out of harmony with the organization — solely because he thought them better fitted for the positions he had to fill than the men recommended by the leaders. Instead of "the good of the party," Governor Hughes consulted what seemed to him the interests of the state. There was no longer any side-door entrance to the Executive Chamber for favored politicians. And, when they saw that the case was hopeless, they still dealt with him officially because they must, but behind his back they cursed him and plotted his destruction. Moreover, they misconstrued to some extent his attitude toward the party workers. He has appointed the men recommended by the organizations in those cases where he was convinced that those so recommended were the best available men.

Apart entirely from his convictions and apart from the question of his sincerity, nobody knows better than he himself knows that petty politics for him would spell suicide. The least adventure on his part in the devious trails of political strategy, and he would be lost. For he is, and he knows that he is, untrained, illiterate in the commonplaces of party politics. Scholar though he be in the fields of liberal learning, he is a kindergartner in that geography and mathematics with which the politician is saturated to the finger-tips.

A shrewd political writer among the score that twice a day faces the Governor asked him one day last winter a searching question, founded in the reasoning of those to whom politics is grist for the daily mill. He waited breathless for the answer:

"I have nothing to say for publication about that matter," said the Governor, inscrutably. "But for your own information" — his eyes began to twinkle —"I will say that I have n't the remotest idea what you are talking about." And he joined heartily in the roar of laughter which followed, and nobody had the slightest doubt that what he said was true.

HIS STRENGTH AMONG THE PEOPLE

Half a dozen times he has invaded the bailiwick of some local boss to make a speech at a county fair, to visit a state institution, or what-not,— has been his guest, has been introduced by him to his constituents. And afterward the Governor has displayed unfeigned amazement when the newspaper men have told him that he had been sitting at the fireside of one who would cheerfully participate in his political obsequies.

The state and local leaders of the Republican organization would have assured you last winter that Governor Hughes was "wrecking the party." Most of them know better now. The November elections showed no sign of party weakness, save perhaps in those two or three places where Democrats whom the Governor had appointed were overwhelmingly elected to succeed themselves. Most of the leaders know now that the record which Governor Hughes has already made is the best asset of their party in the state.

The steadily growing confidence of the people in his sincerity, even more than in his wisdom, has been his sole weapon. "If I fail here," he said at the outset of his term, "I shall appeal to the people. Let the people judge."

And appeal he did, in speeches made as occasion presented, in every corner of the state. He took the people into his confidence and carefully explained his policies, leaving the people to do the rest. And they did not fail him.

One of the Senators who voted against the removal of Superintendent of Insurance

Kelsey, and the sincerity of whose motives never has been questioned, said to the writer a week after the vote:

"When I got home the people fairly mobbed me. They took me to task on the street corners and called me up on the telephone in the middle of the night. They said: 'Look here, young man, why are n't you standing with the Governor? Are you tired of political life? You go back to Albany and line up behind Hughes, or never dare to ask again for votes in this district.' "

A veteran legislator, passing through Albany just before Christmas, put it in this way: "It won't happen again. This winter the legislature will eat out of the Governor's hand like a pet cow."

Not even Mr. Roosevelt, as Governor, had such a daily mail as this man. He hears from the people direct. From Montauk Point to Niagara Falls, they write and telegraph and telephone to him.

"I have taken an exclusive retainer from the people of the state of New York for two years," he said in a speech at Elmira. And to the newspaper men he said one day: "Just so long and so far as I understand and heed the best sentiment of the people, I shall succeed. When I cease to do that, I shall fail, and deserve to fail."

THE GOVERNOR'S BALANCE

But he is not stampeded by mere clamor. There was distinctly a public demand for the two-cent fare bill. In his now famous veto message, he said:

"We shall make matters no better, but worse, if to cure one wrong we establish another. The fact that those in control of railroad corporations have been guilty of grossly improper financiering and of illegal and injurious discrimination in charges, points clearly to the necessity of effective state action, but it does not require or warrant arbitrary reprisals. In dealing with these questions, democracy must demonstrate its capacity to act with deliberation, and to act justly."

This was no servitude to corporate wealth — it was a demand for fair play. It was not long after this that he said to an audience:

"They who think they may dwell secure in citadels fortified by the gains of selfish effort, live in a fool's paradise. Our ultimate security must be found in the well-being of the whole, and patriotic sentiment will not tolerate the continuance of unnecessary and remediable conditions to which may be traced poverty, vice, and crime. . . . We are grateful for the unexampled opportunities for individual achievement which our country affords. And we desire to remove the obstacles in the way of so many of our fellow-citizens — for which they are in no manner responsible — to the enjoyment of these opportunities, so that with manhood and womanhood unimpaired by preventable evils they may really have a chance to make the most of themselves."

Among the measures which he successfully urged and signed during his first year were drastic amendments to the child-labor law, and others demanded for the benefit of the working people.

THE WAY HE WORKS

Fundamental in the mental make-up of Mr. Hughes is the habit of impartial investigation. Equally cardinal is his insistence upon a clear demarcation of authority and responsibility. Every effort or suggestion of the heads of departments under him to evade responsibility has been rebuffed. Every application for a position not within his own direct official gift has been turned back. None may sign the Governor's name or issue orders under his authority without his definite, personal knowledge and assent. "By command of the Governor" is no empty phrase, but means that Charles E. Hughes in person has passed upon the matter and assumed responsibility in literal fact for the action taken in his name.

From nine o'clock in the morning until midnight, and often long after midnight, he is absorbed in personal labor upon the matters committed to his responsibility. Every definite complaint not obviously frivolous receives prompt attention and real investigation. If against officials whom the law makes answerable to him, complaints are always referred to those immediately responsible, on the assumption that each intends of course to do his duty, but with the unmistakable implication that in any event it will be required of him. He demands efficiency — such as any reasonable, average man of earnest purpose in his work ought reasonably to be expected to give. This test he is passing down the line to the last and lowest local officer amenable to him. It has created an atmosphere in the state government, reaching the remotest corner of every department.

Mr. Hughes was born April 11, 1862, at Glens Falls, N. Y., in the foothills of the

Adirondacks and at the headwaters of the Hudson River, of a Welsh-born father and a mother in whose veins flows blood of Dutch, German, Irish, Scotch, and English ancestry. His father is a Baptist preacher. He was taught until ten years old by his rarely accomplished mother, attended public schools in Newark, N. J., and New York City, and was five years at college — two at Madison (now Colgate) University, and three at Brown, whence he graduated with the class of 1881. He taught school and read law for a year at Delhi, N. Y., going then to the Columbia Law School (Class of 1884). With the exception of conspicuously successful lectureships in law and two years as a professor in the Cornell Law School at Ithaca, N. Y., he has devoted himself entirely to the practice of his profession.

The recreation upon which he sets his heart is that of climbing mountains, and almost every summer since 1894 has found him in Switzerland and the Tyrol. His daily rest is in a change of work, for the most part, but he is an omnivorous reader. From some source has emanated a story to the effect that Hughes in early boyhood pledged himself to "heavy" reading, and more especially to eschew fiction. Whatever may be its foundation, the implication of the legend is very far from the truth. From childhood his appetite for general literature has been insatiable. Before he was eight years old (he told me this himself) he had read, "for the story," practically all of Shakespeare's plays. At Brown it was said that nobody in college had read anything like so much as Hughes of what might be called the higher fiction and the drama. Last winter, while the Legislature was struggling and even deadlocked with some of the problems to which he had directed its attention, he read six of the "swashbuckling" novels of Dumas.

JAPANESE IMMIGRATION

THE QUESTION AS SEEN FROM THE JAPANESE POINT OF VIEW

BY

VISCOUNT S. AOKI

RETIRING JAPANESE AMBASSADOR

WHAT would the American people say if any of their race should be prohibited from entering Canada or Mexico or a far-off country?

I ask this question at the beginning of this article because I want to bring home to those who read the natural attitude which every Japanese must adopt when contemplating the agitation in progress in certain sections of the United States for the enactment of an exclusion law against his countrymen. You are an expanding people. Your emigrants are entering the Dominion to the north in droves. They are entering and remaining in Mexico, Cuba, and South American countries. In those countries, especially in Canada, many of them have become farmers. They are trying to live economically, to gain as much profit as they can, to observe the law and to become honest, decent, law-abiding citizens. They are succeeding, and they are reflecting credit upon their native land, upon their adopted country, and upon themselves.

Now take the situation of the Japanese. We, too, are an expanding people. Our population, according to the last census, is 50,400,000. Our total area, including Formosa and the southern extremity of the Liao Tung Peninsula, upon which Port Arthur is situated, is 176,386 square miles. The population of the United States is almost 90,000,000, excluding your insular possessions. Your area is 3,755,608 square miles. The density of your population is 24 per square mile; ours is 286.

In spite of the relatively small number of persons per mile in your country, thousands depart annually for other lands. These are not merely professional men, merchants, and students, but men who work with their hands and who go in the hope of bettering their condition. Yet in the United States

you have vast areas of land which are uncultivated; you have an abounding prosperity; your per capita circulation amounts to the large sum of $32, and there is an abundance of opportunity for those willing to work. Compare the situation with what it is in my country. The amount of land available for agricultural purposes is so small that we cannot farm on a large scale but must confine ourselves to gardening. Instead of sweeping plains we have hills and valleys. In our northernmost island the climate is rigorous, the amount of snow-fall being much greater than in the United States. We are a comparatively poor people. Our per capita circulation is only $8. The opportunities afforded to us are few when compared with yours.

You say: There is Korea and Manchuria. But Korea is a very mountainous country and Manchuria suffers from a very severe climate. No capital can be found in either; and industry, consequently, is at a standstill. How long could your farmers exist without capital? What could they do about moving their crops to market? Without capital, what portion of the crops would be purchased by the consumers, and would not the proportion unsold remain on the hands of the producers and contribute to their ruin? Apply this situation to Korea and Manchuria. In the present condition of our finances, we have no capital to invest in either of those countries. Consequently, there are no industries of any importance, except those which the Koreans have pursued for generations and which suffice for their simple needs; Japanese who settle in the Hermit Kingdom cannot gain a livelihood. We are not an agricultural people as you are. We have not the immense amount of capital that you have. In the old days, the people added to their rice fare by the results of fishing and hunting. Now, with the introduction of modern industrial plants, requiring a changed diet in order to fit the hands to perform their work, meat is being eaten. Modern sanitation has lengthened life. There is no decrease in the birth-rate. We recognize that our future is as a manufacturing nation, and our people are laboring industriously in our mills and factories. Competition naturally has become keen.

These are the conditions which are responsible for the movement of Japanese to the Pacific Islands and to the Western Hemisphere. The Government has never encouraged emigration. It was begun by individuals craving a better opportunity. The industry, intelligence, and strength of the Japanese appealed to their employers, and the latter, including Americans, Hawaiians, and others, came to Japan to induce immigration to their respective countries. Such emigrants were without protection from brutality and hardships inflicted upon them by their masters. Unwilling to interfere, the Government approved the organization of emigration companies. These companies are required to watch over all emigrants, to provide them with funds when without money or work, to furnish them with medical attendance when ill, and to return them home to prevent them from becoming a charge upon the foreign community in which they have settled.

The few Japanese who emigrated to Hawaii have always enjoyed the most satisfactory relations with the Hawaiian people. They made excellent laborers. They have been law-abiding. Without them, the Hawaiian Islands would not be so prosperous as they are. In Hawaii, they learned of the opportunities existing on the Pacific Coast. They came to California, to Oregon, to Washington. Some were voluntary emigrants, others were induced by your railroads and other industries needing labor. Those that remained in San Francisco were herded in a quarter where they had practically no opportunity to learn American customs or to appreciate the character or value of American ideals. They resembled the colonies of Americans, Englishmen, Germans, French, and other nationalities which to-day are found in "settlements" in Shanghai, Tien Tsin, and other Chinese ports, and which, until I negotiated the treaties abolishing extraterritoriality, existed in my own country. When Commodore Perry first penetrated feudal Japan, he found an obstinate objection to the admission of foreigners to Japanese soil. The masses of Japan wanted nothing to do with foreigners. They were unwilling even to treat with them. Eventually, as a great concession, foreigners were permitted to establish "settlements," and were vested with extraterritorial rights. This was done, not for the benefit of the foreigners, but to relieve the Japanese of any contact whatever with them. It was the adoption in Japan of the old Turkish policy of using the foreigners for the advantage of the country and limiting the relations of the

people with them. It took nearly half a century to convince us that the policy was wrong; that, instead of gaining by the policy of extraterritoriality, we really suffered by it, and that our interests required the distribution of foreigners through our territory rather than their segregation. For by this they constituted a grave embarrassment and a real menace.

It has been said that the Japanese cannot assimilate with men of Caucasian blood, has the experiment had a fair trial? It is unnecessary for me to point out the achievements of the Japanese, which have given them recognized equality in all lands, including America. Those men are welcomed and, of course, there is no suggestion that they should be excluded. I am referring to the laboring class. They are frugal and industrious. They make law-abiding citizens. They educate their children. They become acquainted with your institutions. They want to embrace American citizenship, but your laws do not permit their naturalization.

This shows, then, that the question is not a racial one primarily. It is economic, and from it have grown the political and racial phases. Now let us see what remedy exists for its removal.

To my mind, the solution lies in the distribution of the Japanese. Any so-called Japanese quarter should be abolished. The men and women residing therein should be encouraged to live wherever they desire. The Bible says that every laborer is worthy of his hire. No one will work for less than he can get. The Japanese certainly will demand the wages of his white competitor if he knows what those wages are and has a chance to obtain them. Living among the whites, the moral pressure of his neighbors will cause him to act as they do. In other words, he will be assimilated, and with his assimilation the economic and other questions will disappear.

Since the time when Perry came to Japan, the relations of the United States and my country have been based upon sentiment. The immigration question is the first of any importance to arise between us. We have identical interests in the Pacific Ocean and in the Far East. You want freedom of trade; so do we. We welcomed you to the Philippines. We have no desire whatever for them. Indeed, we want you to remain in the Far East, for, with your power and prestige, and with your unselfish aims, you can be depended upon to uphold those principles which are as important to us as they are to you. The integrity of China and the open door in that Empire were principles first enunciated by your Secretary of State. As Minister of Foreign Affairs, I accepted those principles, and as heartily approve them to-day as I did in 1899. If the United States were to withdraw from the Far East, the upholding of those principles would be a matter of great difficulty. As we have no designs upon the Philippines, so we have no designs upon Hawaii or your other Pacific possessions. You, on your part, we are convinced, entertain no intention to seek Formosa or other islands or territory belonging to us. There is no point at which our boundaries come in contact; consequently, there is no cause for friction in this respect. You were the first to recognize our preponderance in Korea, an act of friendship which no intelligent Japanese can forget. More than this, you gave us moral countenance in our trying time. These are the reasons why, to every Japanese, the idea of even strained relations with the United States is abhorrent; why we want and have earnestly endeavored to arrange the immigration question to your satisfaction and to ours. That one question is insufficient to disturb a close friendship of nearly sixty years. But, to prevent it from doing so, the American people should recognize our position in the matter. They should understand that we, too, are a proud people. They should appreciate that an Exclusion Act would be a slap in the face which no first-class power could permit to pass unnoticed. I say this in a spirit of the greatest friendliness. I have always been a strong admirer of American energy and of the American institutions. And it is because of this admiration and of the affectionate respect I feel for the American people that I speak plainly, believing that my words will be interpreted in the friendly way in which they are intended.

So let us have the *status quo* for a while. Japan has engaged to enforce regulations which will rigorously restrict the emigration of laborers to America. And, to strengthen the ties of sentiment between the two countries, I urge American capital to do its part. We have a splendid commercial and industrial future. Our situation near the shore of

Asia, with its vast undeveloped market, gives us an initial advantage which cannot be overlooked. We hold the same relative position to Asia, which is virgin, that the British Isles do to Europe, which is a hive of modern industry. We import our raw materials, as Britain does. We have cheaper labor than that country. Our industrial establishments are increasing in number, but not so rapidly as they should, because we lack the capital. Having a high regard for the business integrity of Americans, we would gladly welcome them to our country and give them every opportunity to display their enterprise.

I am anxious that American capital should adopt this suggestion, not merely for the advantage of individuals but for the advantage of the two countries. France would not dream of going to war with Russia, no matter how great the provocation. An amicable settlement would surely be found of any question that might arise. Why? Because of the enormous value of French investments in the land of the Czar. This is what I would like to see in the case of the United States and Japan. Let American capital come to Japan, and with its use and increase will disappear even the thought of friction.

TRAINING WORKMEN FOR BETTER JOBS

TWENTY YEARS' WORK OF PRATT INSTITUTE, WHICH HAS RAISED THE WAGES OF MORE THAN 60,000 PEOPLE BY MAKING THEM WORTH MORE TO THEIR EMPLOYERS

BY

EDGAR ALLEN FORBES

DON'T you wish there were a school to which you could send for workmen whose diploma would be a positive assurance that they could walk into the shop, go up to a machine-tool, and intelligently turn out a good piece of work?" a manufacturer asked his foreman.

"It would be a godsend!" was the answer.

There is such a school — fortunately, more than one. A diploma from Pratt Institute of Brooklyn, for example, guarantees that very thing, but as a rule every graduate is engaged before he leaves school. The simple account of how this institution came into existence forms one of the most interesting and most important chapters in the history of American education.

A BUSINESS MAN'S EDUCATIONAL IDEAL.

In every fundamental principle, as well as in the last analysis, the story of Pratt Institute is the story of a man — a man who in his boyhood had so little chance that in his declining years he wanted to help others to escape the rough handling that the world had given him. The son of a poor mechanic in Watertown, Mass., he had to go to work at the age of ten. He picked up a few scraps of education the best way that he could, but he started through life handicapped. Poverty and the up-hill climb neither embittered nor discouraged him, however, and he became probably the richest man in Brooklyn. After he became wealthy, the recollection of the boy with a handicap weighed heavily upon him. He decided to give him a chance.

When Charles Pratt made up his mind to devote a part of his fortune to some benevolent purpose, he had a clearly defined notion about the best way to spend it. But he was by nature an irresolute man — and was so conscious of this weakness that he once drove a nail into his handsome desk as a reminder — so he asked advice from all kinds of people. He got it — plenty of it. Then he made the rounds of a number of benevolent institutions of different kinds and observed their work. The advice and the experience convinced him that his own idea was the right one.

Sitting at his desk one day, he watched a group of discontented workingmen as they passed. "I'll do it!" he exclaimed. "I will give my money for it!"

"For what?" he was asked.

"I will build an institution that will add

value and dignity to labor, one that will lessen discontent among the working classes."

A SCHOOL OF JOYFUL CRAFTMANSHIP

And Pratt Institute was the result. No one has ever expressed its purpose so well as the founder, in one of his earliest addresses to the students:

"The design of Pratt Institute is to afford such instruction as shall best enable men and women to earn their own living by applied knowledge and the skilful use of their hands in the various useful industries. An appreciation of the dignity as well as of the value of intelligent handicrafts and skilled manual labor is at the foundation. Whatever is done, either by the Institute or the students, is to be genuine and the best attainable of its kind. It is not to be forgotten, however, that personal character is of greater consequence than material productions. The man is of more value than either his occupation or his surroundings."

These were not platitudes; Mr. Pratt was thoroughly in earnest and he spent the rest of his life in making realization possible. As one of the directors expressed it to me: "The man who founded this institution knew so definitely what he wanted, and wanted it with such tremendous energy, that it would have been strange if the Institute had not come pretty close to that realization." Up to his death (in 1891), the Institute was his chief concern, and he communicated his ideals so successfully that his entire family caught the enthusiasm. Mr. Charles M. Pratt, now president of the board of trustees, and Mr. Frederic B. Pratt, who is the executive officer, were especially trained by their father to carry on his work according to the original specifications. Mrs. Pratt watched its development with fond solicitude; when she died, about a year ago, she left to the Institute half a million dollars and a remarkable collection of rare textiles. A meeting of the board of trustees is an interesting spectacle, for its six members are the six sons of Charles Pratt — and all are graduates of Amherst. To the unswerving loyalty of these sons is probably due, in large measure, the remarkable success of Pratt Institute.

For it is a remarkable success, from whatever standpoint you view it. More than 61,000 persons have been trained in "the skilful use of their hands" these twenty years, and have been taught also a great truth that would be epoch-making if the whole world could grasp it. This is it, expressed by Charles Pratt in his last Founder's Day address:

"I am convinced that the great industrial problem which we are trying to solve is very much wrapped up in the thought of educating the people to find happiness in a busy, active life, and that the occupation of the hour is of more importance than the wages received."

A SCHOOL WITH AN ELASTIC PLAN

It is hard to realize that so recently as 1886 a wealthy philanthropist with this ideal and a determined purpose had to work out for himself all the details of a school for industrial training; yet such is the case. There was no school then doing the kind of work that he wanted done; methods as well as instructors had to be found. But the success of such a school was then so problematical that he filled the building with windows in order that it might be used as a factorv if his plan should prove impracticable.

Two weeks before the beginning of the first session he did a very unusual thing. The office was opened for the enrolment of students and they were asked to say what they wanted to learn. It was like ordering from a menu-card. On October 17, 1887, the Institute began its work, with twelve pupils. New departments were added when they were needed, and were dropped when the necessity no longer existed. For example, the commercial department — which was prominent in the early years — was discontinued when business colleges became common. The Institute's high school was dropped as soon as manual training became a part of the public school system. A plan for establishing branch libraries was abandoned by reason of Mr. Carnegie's generosity in this direction. On the other hand, the training of teachers in four of the departments is a development since 1891, based upon a steadily increasing demand. The excellent library school is another instance.

It is a significant fact that Mr. Pratt did not, in his will, lay down any hard and fast rules for the Institute. The trustees have, therefore, made changes in its courses and methods whenever they seemed advisable — but have never changed its purpose, though this also is in their power.

Nine large buildings and 175 instructors are now required to do the work of Pratt

Institute. The courses of study are grouped under six departments, each in charge of a director. The six directors (with Mr. F. B. Pratt) constitute the faculty. Each director is responsible to the faculty for his or her department, but is not hampered by any arbitrary regulations. About all that is asked of a director is that the department be efficient. The Institute has no summer school, nor correspondence courses, and gives no academic training. To describe all the work offered by the Institute requires a catalogue of 128 pages, so only the barest outlines can be given here.

The department of science and technology alone has more than fifty instructors. Its chemical laboratories have room for 160 men and in its machine-shop 120 may work at one time. The kind of equipment is shown by the fact that the soap-making class uses vats instead of test-tubes, the leather class starts with the untanned hide and turns out dyed leather, the paint-making class manufactures the materials from which paint is made. In the shops students are taught to make machinery, not merely to operate it. In addition to the regular courses, evening lectures are given to carpenters, plumbers, and mechanics working at their trades.

The department of fine and applied art, with thirty-eight instructors, places the emphasis on the "applied." The day courses include normal training for teachers, pictorial and costume illustration, architecture, designing, jewelry, etc. Evening classes are also given, and Saturday classes for boys and girls.

The department of domestic arts — sewing, dressmaking, millinery, and dress design — does three kinds of useful work: its full-time courses train women (and a few men) for the trades; its part-time courses teach women how to do their own sewing and millinery; its evening classes are for working girls who want to learn how to make their own shirt-waists and trim their own hats.

The domestic science department includes all kinds of housework, from kitchen to sick-room. It has a two-year course for teachers and a one-year course for dietetists, matrons, and housekeepers. There are also evening classes in cooking, serving, and laundry-work to which a housewife may send her maid — or come herself. "Warmed over dishes" and "removal of stains" are two of the subjects. There are also Saturday classes for schoolgirls. The kindergarten department has courses for teachers, for mothers, and for the children themselves. The library school trains those who expect to become assistants in library work, and its classes are always filled. It is carried on in connection with the Institute's library of 87,000 volumes, which is free to all the residents of Brooklyn. It does the usual work of a public library and serves the community remarkably well. It has also a unique department for working men. A room has been equipped with technical reference books, trade magazines, "union" periodicals, etc., and men who work at their trades by day are encouraged to spend their evenings here in preparation for advancement.

There are no text-books for any of these departments. A student is taught how to *do* a certain thing, just as he will have to do it outside the school. He gets the theory before he leaves, but not from books. He learns the principle of the inclined plane, for example, not from a diagram but from a real incline, with weights attached to show the "pull."

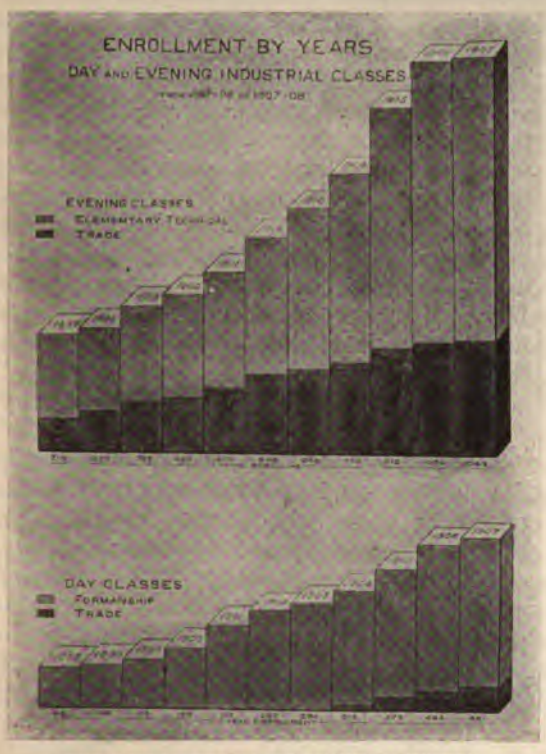
THE INSTITUTE'S RAW MATERIAL

Leaving out of consideration those who merely attend certain lectures or demonstrations, the students who enter Pratt Institute may be grouped in two divisions — day classes and evening classes. Those who enter the two-year day courses are usually young men and women who must shortly earn their own living. For the most part, they are the children of men who work with their hands. Running down the roll of the applied chemistry class, the fathers of the first twelve are given as follows: Weaver, produce-dealer, leather business, fisherman, shoe-dealer, minister, clerk, farmer, paint-dealer, saloon-keeper, sailor, penny-vaudeville business.

Opposite nine of the names of these twelve young men is the director's memorandum: "Making a sacrifice." Many of them are getting their education with the help of savings which their families have laid by for old age, in the expectation that the money will be repaid before it is needed. The families of only six out of sixty-seven students in another class are reported to be in "comfortable circumstances." There is a record of one young man without family resources who wanted his education with such intensity that he set aside a certain sum from his meagre earnings for a

period of 120 consecutive months. This student would have gladdened the heart of Charles Pratt.

Approximately, half of the students are from Brooklyn and other parts of Greater New York. Of the other half, the largest delegations come from New Jersey, Connecticut, and Pennsylvania, but a number of foreign students are enrolled every year. Nova Scotia, South America, Spain, Honduras, Japan, and China were represented last year.



THE RAW MATERIAL OF PRATT INSTITUTE

As the trustees see it, the results of twenty years prove the wisdom of the founder in his refusal to demand a high-school education as an entrance requirement, except in the normal courses and the library school. He laid down no condition that would have excluded the boy Charles Pratt half a century ago. Many educators, therefore, would say that the educational average of students entering Pratt Institute makes a poor showing. From their standpoint, it does. The records of one class of 216 shows that only thirty-eight had the equivalent of a four-year course in high school, and that twenty-five had no high-school training whatever. But the point to remember is that those young men are expected to earn their living with their hands, and the instructors have found that a boy who never heard of Cæsar's Gallic War can accurately turn the threads of a screw-bolt or calculate the strength of a beam of reinforced concrete.

When it was observed last year that the entering class of the science and technology department had received even less high-school training than the average, the trustees congratulated themselves that they were getting more young men from the shops. These trustees place no premium on ignorance; they are themselves college men and believe in keeping educational standards high. But they do not insist that the future foreman of a machine-shop be excluded because he has not the same preliminary training as a future lawyer or teacher. So much for the day students.

Much of what has been said applies to the evening classes, of course, and with greater emphasis because these students work at their trades during the day. In one of the applied chemistry classes, for example, the seventy-seven students represented forty-four different mechanical industries in Brooklyn. It is a gratifying experience to see how eagerly these evening classes grasp theory, as opposed to practical demonstrations. Having done a certain thing in the shop all day, they learn at night why they did it, or did it in that way. Moreover, they are learning how to do it more easily next time.

WHAT BECOMES OF ITS GRADUATES

The efficiency-test may be applied to Pratt Institute in a simple way: what has become of its graduates? In weighing the answers to this question, one must remember the purpose of the founder. For example, when I asked the director of the department of science and technology to name over some alumni now occupying positions of distinction, he reminded me that the Institute was not training "captains of industry," but was preparing men to fill the positions below the grade of skilled mechanic. He suggested that a more appropriate test would be the number and efficiency of the men sent into the trades. Let that test, then, be applied to his department.

First, as to numbers: 1,160 men were in training last year in this one department. About two-thirds of these were men working at their trades during the day and attending

classes at night. An examination of the diagram on page 10047 will show the number of students in training and their distribution among the various departments. The total number enrolled last year in all departments of the Institute was 3,719. But the school places less value on numbers than do most institutions. One of the president's arguments in favor of a certain change was that it would reduce the number of students. This would not be considered a weighty argument by the trustees of most schools, but efficiency comes first with Pratt Institute. Whenever a student betrays a lack of interest in his work, he is promptly told that there is another fellow waiting for his place.

Just what has become of the graduates from the steam and machine design course is shown in the accompanying table. But it should be borne in mind that Pratt Institute does not expect its graduates to fill responsible positions until they have had several years of practical experience.

Types of positions held by graduates of the Steam and Machine Design Course

Of those who completed their course five or more years ago, 63 per cent. now hold responsible positions and 10 per cent. have left engineering work.

	CLASSES OF 1902 AND EARLIER	CLASSES OF 1903 AND LATER
General managers, assistant managers, superintendents, or foremen in charge of important departments of manufacturing plants	30	11
Proprietors of small mfg. plants	1	3
Chief engineers	6	3
Chief inspectors or assistant chiefs	2	—
Chief draftsmen or assistant chiefs	15	14
Teachers	3	2
Designers	9	17
Inspectors	3	9
Draftsmen	7	27
Machinists' apprentices	1	15
Testing positions	—	11
Students in other schools	—	12
Outside of mfg. and engineering	8	9
Total	85	133

Here are some figures that show what has become of graduates of the normal courses: 38 are instructors in colleges; 64 are instructors in normal schools; 160 are teaching in academies and high schools; 369 are supervisors in public schools. The art course is represented in Indianapolis by 11 teachers of drawing; in St. Louis, by 13; in New York City schools, by 52. It would take several pages of this magazine to mention even the names of the Pratt Institute graduates who occupy positions of distinction. For instance, four art graduates exhibited paintings at the National Academy this year; several from the costume illustration class are in the art departments of important magazines; Mrs. Gertrude Käsebier has won international fame as an artistic photographer; one of the class of '05 in art metal work went directly into the Tiffany workshop; Miss Fay Kellogg, one of the few women architects in America, went from the Institute into the office of Messrs. Carrère & Hastings, but now has an office of her own. A woman from the domestic science department is chief dietetist of all of New York City's institutions, and another holds the same position in Johns Hopkins Hospital, Baltimore. The domestic arts course has furnished teachers for training schools so far away as Honolulu and Sitka.

ITS INFLUENCE UPON EDUCATION

The unquestioned efficiency of the average graduate of Pratt Institute and his enthusiastic loyalty to the school which has made him what he is have changed the current of many minds. The quality of the finished product — "Made in Pratt Institute" — points so unmistakably to the soundness of its plan and its methods that a visit to Brooklyn naturally becomes one of the first steps in the organization of any school or department that proposes to include industrial training. That Mr. Carnegie's visit to Pratt Institute made a radical change in his plans for the industrial school which he gave to Pittsburg there is little reason to doubt. It is known that its original plan — drawn up by the commission selected by himself — was for a technical school which would turn out professional men. Then he went to Pratt Institute and came in contact with the "Pratt spirit"; himself a major-general of industry, it did not take Mr. Carnegie long to grasp the idea that the world's greatest need is an efficient corps of non-commissioned officers — not merely captains and lieutenants. At any rate, what he did was to pigeon-hole his elaborate plan and select a new commission, of which one member was a director in the Institute and another was from the New York

Trade School. The principal features of the Carnegie School, as it was organized, were adopted from these two industrial institutions.

A score of other instances where the Pratt influence is clearly traceable could be given. Perhaps the best evidence is the difficulty that the Institute has in keeping its instructors. A man who has proved himself able successfully to teach one of its courses is exactly the man wanted by another institution when it is ready to organize a similar department. The director of Pratt's largest department reported last year that about half of his instructors in the day classes had resigned in favor of positions elsewhere, and that ten of the seventeen instructors in the evening classes of the year had been new men. Since it takes two or three years to train even an experienced teacher so that he will fit into the Institute's plan of work, the loss of 50 per cent. of the teachers in one department is a serious matter. When it comes on gradually, the trustees take a philosophical view of the loss. The Institute was founded to train men for better jobs; when an instructor is offered a better place, the logical thing, therefore, is to "speed the parting guest." They do this with more graciousness, perhaps, when they reflect that every instructor sent to another school leavens the lump with "the Pratt spirit."

An illustration of this is found in an outline of the new system of training apprentices that was adopted two years ago by the New York Central lines. In reading the two items below — which the report says are essentials to the system's success — one does not need a microscope to find the Pratt influence:

"The selection of an educational instructor who shall have sufficient originality to cut away from current educational practice and to meet the local needs of the apprentice in his own way.

"The outlining of a course of study which will closely combine the theoretical and practical, and which will be framed for the dullest apprentice and not for the high-school graduate."

Investigation reveals that a former instructor of Pratt Institute had a good deal to do with the installation of the system.

PRATT'S INFLUENCE ABROAD

This influence is increasing in an ever-widening circle. Baedeker's guide-book for tourists visiting the United States calls their attention to the fact that the Pratt Institute is one of the best-equipped technical schools in the world, and even the Gaekwar of Baroda lingered long enough to see it at work. Dr. Grenfell, whose humanitarian work among the deep-sea fishermen of Labrador is known everywhere, became so enthusiastic that he proposes to send some of his boys to the Institute. Señor Ernesto Nelson, of the Argentine Republic, who spent a year in studying American educational institutions, carried with him from Brooklyn many Pratt ideas. The French Government sent two representatives to study the Institute's methods; two came from Guntur, India, where there is an important mission school. Others have come from England, from Switzerland, from Finland, from China, from the Imperial University of Japan, and from other countries where statesmen and economists have begun to realize that their industrial development depends largely on technical education.

THE COST OF INDUSTRIAL TRAINING

A two-year course at Pratt Institute costs the student between $700 and $800. The head of the science and technology department figures up a year's expenses in this way: Board, $180 to $220; tuition, $45; laboratory, $10; books, $30; miscellaneous, $80 to $100. The tuition varies according to the course; the highest rate is $25 per term; the lowest is $3. And this recalls another principle incorporated by the Institute's founder.

Charles Pratt had a high appreciation of the quality of independence as an asset in life, and he was opposed to the pauperizing of young men. His own hard experience had taught him that a boy with the right spirit would become a more useful man if he paid something for his training — and so he opposed all suggestions that the school be made absolutely free. His theory of practical philanthropy was that if he provided buildings and machinery, the student should meet his share of the running expenses.

As a matter of fact, the tuition does not meet the operating expenses. After adding to it the income from the large endowment and from other sources, the deficit for the last four years has been as follows: $46,000; $53,000; $79,000; $45,000. In the published financial reports, opposite each of these deficits has appeared the matter-of-fact comment: "Made up by the trustees." In other words, the sons of Charles Pratt inherited his spirit, as well as his estate, and they are willing to give $50,000 a

year out of their own pockets rather than see the Institute fall short of its original purpose.

A PARTNERSHIP OF SIX SONS

It is from the reflection of the father as seen in these six sons that the younger generation comprehends the genius of Charles Pratt. If you ask Mr. F. B. Pratt why he is devoting his life to the Institute, he will answer that it is a legacy. Ask this, that, or another son why he is doing his particular task, and he will tell you that it is also a legacy. It would be difficult to find in America a more striking example of the appreciation of the sacredness of family ties. The father taught his children to hang together; to encourage this, he purchased a large estate on Long Island (at Glen Cove) and built houses for the six sons and the two daughters to occupy when they were married. The result of this family training is seen in the fact that the original firm of Charles Pratt & Co. has never been dissolved. One son took charge of the railroad interests; another is the head of the bank; another has charge of the Institute; and so on. Once a week they all get together and discuss the diversified interests of the firm — for every son regards every form of the father's activity as a legacy left to them in trust. And they, in turn, are bringing up their children in the same way. Herein may be found the explanation of the Institute's unswerving loyalty to its foundation principles — and the strongest assurances for its future. To the $2,500,000 endowment of father and mother, each of the sons — and all are young men — has already given $50,000. For a Pratt to be disloyal to the Institute — that would be infamy!

"THE PRATT SPIRIT"

The genius — and also the strong personality — of the founder is also reflected in what is known as "the Pratt spirit." Everybody seemed to have it, but nobody could tell me exactly what it is. No two definitions were alike. Professor Williston says that it is "team-work, from the president down to the lowest janitor or the newest student; when the president gives the word, everybody jumps in and coöperates — and makes believe that it 's fun." But that is n't all of it.

Go from one workshop to another and you will observe two things: the absence of college boisterousness and the tremendous energy of the instructors. There is less confusion and noise even in the forge and foundry shop than in the average college laboratory, yet there is no apparent exercise of restraint. The "boss" of the job is one of the students, who will next week have another as his own "boss." Ask the instructor to explain the workings of his shop, and it is as if you had set a dynamo in action. He talks like he walks — with a rapidity that emphasizes the value of time — but his phrases are vigorous and as cleanly cut as if turned out of a machine. At first, you may attribute this to the man's individuality, but when you observe the same phenomenon in half a dozen shops, you decide that "the Pratt spirit" is energy and seriousness in action.

I heard of an instructor who had been recommended to a more desirable position in another school. Duty to his family demanded that he accept it if offered, and he was quite unhappy because he was sure that the offer would come. But it did n't, and he was more than pleased. A more recent instance is that of a janitor in the library who had accepted a municipal job with double his previous salary. Yet his attitude during his last week at the Institute was that of a workman who had been notified that he will be laid off after Saturday. And so it goes throughout all departments. Everybody seems to have caught the idea that work is fun.

Charles Pratt died within about three years of the opening of the school which he had founded as a new experiment in education, and it was not granted him to see much of its fruition. Yet his clear-sightedness enabled him to project into the future the results of the Institute's earliest years, and the sight gladdened his soul. It was this vision that prompted him to say to the assembled students one day: "I am so grateful that the Almighty has inclined my heart to do this thing." This sentiment has since been echoed by thousands of young men and women who have taken hold of the work of the world with trained hands and have been taught to see the joy of it.

At one of the annual exhibitions of the Institute, a priest was examining a series of essays on great men, written by the students. He looked them over, one after another — George Washington, Benjamin Franklin, Julius Cæsar, Napoleon Bonaparte — and then turned to one of the instructors:

"Where is Charles Pratt?" he asked.

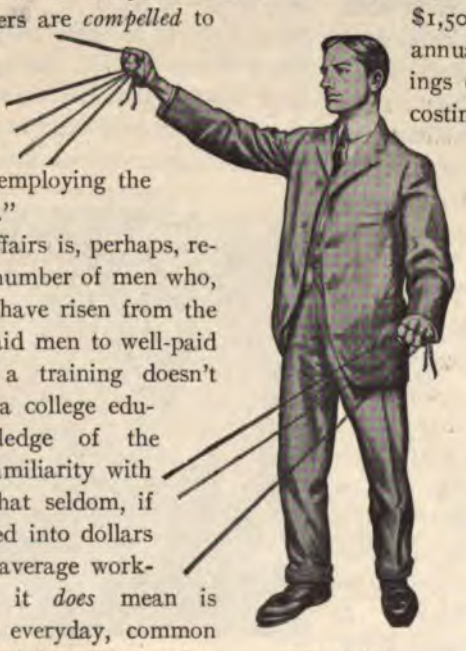
BIG SALARIES AND THE MEN WHO GET THEM

By VICTOR FORTUNE

Why Training and not "Pull" is the great influence behind the fat pay envelope

It used to be said, and not without some truth, that "pull" rather than ability put men in line for well paid positions.

But *this* is the day of the trained man — the expert. Competition in every business is so keen that employers are *compelled* to seek men of ability to do the work, rather than jeopardize their business interests by employing the man "with a pull."



PULL YOUR OWN STRINGS

This state of affairs is, perhaps, responsible for the number of men who, through training, have risen from the ranks of poorly-paid men to well-paid positions. Such a training doesn't necessarily mean a college education, a knowledge of the "ologies," or a familiarity with remote subjects that seldom, if ever, can be turned into dollars and cents by the average working man. What it *does* mean is the hard-headed, everyday, common sense, *practical* training that makes men invaluable to their employers — *that leads to more money.*

"Pull" received a hard knock with the coming of the International Correspondence Schools of Scranton. The I. C. S. has made it possible for any man, young or old, to place himself in line for promotion and a bigger salary without having to depend on the influence of his friends.

ABOUT THE I. C. S.

With an instruction staff of over 400 *practical* experts; 200 courses of study costing $1,500,000 to prepare and $250,000 annually to revise; 5 home office buildings covering 7 acres of floor space and costing over $500,000; with these great advantages the I. C. S. is positively the largest and best man-helping institution the world has ever known. The International Correspondence Schools were founded in 1891, since when they have been first in size, first in number of subjects taught, first in simplicity, thoroughness and practicality. As an evidence of the salary-raising power of the I. C. S. it is only necessary to point to results: Of the total number of men whose salaries have been raised through I. C. S. training within the last year, over 4,000 have *voluntarily* reported salary increases aggregating, in one year, $2,221,332. Add to this the number who have had their salaries raised but who have *not* been heard from, and some idea may be had of the magnificent work the I. C. S. is doing for men.

Not so many years ago a training such as the I. C. S. offers could be obtained only at college and at an outlay of a great amount of money Such a thing as receiving a good, sound, practical training in one's spare time was unheard of.

Not only does the I. C. S train men, but it advises them by suggesting most suitable courses and pointing out how easily obstacles may be overcome. *There's not a poorly-paid, ambitious man living that the I. C. S. cannot help — no matter how young, old or poor he may be, or how much or how little schooling he has had.*

MEN WHO HAVE EARNED MORE

Through the help of the International Correspondence Schools, thousands of men have acquired the training that has brought them rapid promotion and success. A case in point is that of H. A. Bankston, 216 Bright St., Macon, Ga., whose salary was *more* than doubled in a very short time. Bankston says: "I enrolled with the I. C. S. when I was working as a carpenter in a railroad shop I am now a *contractor and builder* and have increased my earnings from $2.50 per day to $2,000 a year. The advantages of my course are too numerous to mention."

BOOKKEEPER BECOMES MANAGER

Kanston P. Cross, of Pembroke, Ky., was once a bookkeeper, and a good bookkeeper, too. But he wasn't satisfied. He saw other men filling big positions and thought it was "up to him" to better himself. He didn't wait for an opportunity, he *made* it by enrolling for an I. C. S. Course, with the result that when last heard from his salary had increased to $1,600 per year. Cross writes: "I was a bookkeeper when I enrolled. I am now manager of the Tobacco Storage Warehouse, Pembroke Warehouse Co., and of the Pembroke Light, Power and Water Co. Words cannot express my appreciation of what the I. C. S. has done for me."

When it is considered that the I. C. S. trains men without requiring them to leave home or give up work, and that they continue to earn while they learn, the success of these men is the more remarkable.

Another great advantage is that the I. C. S. reaches and helps men no matter how far away they live, what they do for a living, or how long their working hours may be. This is clearly shown by the testimony of James B. Lund, 214 Baird Ave., Chicago, who through I. C. S. help advanced from

FARMER TO HEATING AND VENTILATING ENGINEER

Lund says: "When I started my Course in the I. C. S. I was working on the farm. I am now heating and ventilating engineer with the firm of Andrews and Johnson Company, and am earning $1,400 *a year more* than I did when I enrolled. *This advancement is all due to the start I received from the I. C. S.*"

That's I. C. S. method — takes a man from the farm and places him in a good position at the work of his own choice — to say nothing of bringing him a raise in salary of $1,400 a year. The motto of the I. C. S., "The Business of This Place Is to Raise Salaries," is *not* something merely to catch the eye, but a *truth* behind which stands the testimony of thousands of once poorly-paid men who, like Lund, have achieved lasting success through I. C. S. help.

TEACHER TO CHEM[illegible]

CLERK TO INSPECTOR

The story of Albert Suhern's rise from clerk in a retail store to railroad inspector is particularly interesting, in that it shows what a man can accomplish in spite of long hours, provided he has *the right kind of help*. He says:

"When working as a clerk in a retail store sixteen hours a day, I took out a Course in the I. C. S. My Course enabled me to get rid of a position that was very burdensome and disagreeable to me, and to become an inspector for the New York, New Haven and Hartford Railroad. My earnings are $45.00 a month in advance of what they were when I enrolled." Address 171 St. John St., New Haven, Conn.

That's another feature of I. C. S. training. It takes men from uncongenial positions and puts them at the work they like best. Still another advantage is that the I. C. S. way is so simple, and at the same time so thorough, that ambitious men are enabled to overcome every obstacle and to quickly fit themselves for better positions and bigger salaries. Suhern's experience proves this.

SCHOOL TEACHER TO CHEMIST

It is wrong to suppose that the I. C. S. is only for men with little schooling. The I. C. S. also helps men who possess the advantages that a good schooling offers, but who wish to know more and earn more. To such men an I. C. S. Course is better than a college course because it leads to knowledge by the shortest route, eliminating all that is impractical or superfluous — with the added advantage that an I. C. S. training can be acquired in *spare time.*

While teaching school at Thomas, Ala., B. E. McDougle concluded that there was a much better position awaiting him somewhere in the world, and so he decided to reach out for it. His qualifications as a school teacher would have enabled him to secure many positions that would have paid better than teaching. But he didn't want them — he wanted work that besides paying well would be congenial. Consequently he took an I. C. S. Course in General Chemistry — a subject that had always appealed to him. Now he is first assistant chemist for the Republic Iron and Steel Co., *at almost triple his former salary.* McDougle didn't have to pack up and go to some other town in order to study chemistry, He didn't even have to stop working. The training came to him in his spare moments; without heavy expense or inconvenience.

RODMAN TO SUPERINTENDENT

Because of his knowledge the trained man is always in line for promotion. With him advancement is natural. This is clearly shown in the case of Wesley W. Albee, of Augusta, Maine, whose letter speaks for itself. It reads: "When employed as rodman in the City Engineer's Office at Melrose, Mass., I enrolled for a course in your Schools. After a few months' study I received an advance in my earnings *without asking for it;* and, making good progress in my studies, received an advance regularly every six months. My advancement in my profession has been steady ever since, and I am now Superintendent of the Augusta Water Works and have increased my earnings greatly. *My Course has been worth thousands of dollars to me,* and I would recommend your institution to any man who is sincere in his desire to advance."

There's nothing padded about a testimonial like that. It rings true. It's a plain, straightforward story of advancement won through ambition, plus I. C. S. help.

SALARY INCREASED EIGHT HUNDRED PER CENT.

The story of how Harry J. Lebherz, Frederick, Md., had his salary multiplied by eight reads like a book. Young Lebherz when a mere schoolboy of sixteen, enrolled for the I. C. S. Electrical Engineering Course in August, 1900. Four months later he secured a position as tracer for the Ox Fibre Brush Co. of Frederick, Md., and gradually advanced to the position of head designer. He was recently made assistant superintendent. When last heard from his salary had increased 800 per cent. since the time he secured his first position.

Being of an inventive turn of mind Lebherz was able to put that talent to good account through the help of his I. C. S. Course. One of his inventions is an automatic brush machine which he designed one year after he enrolled.

STORIES OF SUCCESS.

Nothing ever written is so replete with such dramatic history of success as the stories of the men who through the help of the I. C. S. have won higher places in the world. Contained in the I. C. S. book entitled "1001 Stories of Success," which is sent free to all who mark the coupon, are the *voluntary* statements of men telling how they have succeeded in breaking away from poorly paid positions and connecting with the fat pay envelope — how dissatisfied men have obtained congenial positions — how men long past their prime have got in line for promotion without having to start afresh — how the young man leaving school has stepped into a good position at the very outset — how men already in good positions have advanced to even better — how from a state of dependence men have gained independence — how salaries have been doubled, trebled, quadrupled.

The I. C. S. takes a clerk and makes him a chief electrician at nearly three times his former salary. That's what it did for A. G. Carpenter, Bakersfield, Cal., who says he is making rapid progress, and that the I. C. S. offers rare opportunities to all ambitious men.

While pegging away as a shoemaker, Ralph C. Tebbetts, of 7 Furber St., Rochester, N. H., enrolled with the I. C. S. for a course in engine running. He writes: "I am now assistant engineer, and my earnings are more than doubled. Previous to my taking your course *I knew nothing whatever about an engine.* I consider your system of education all that you claim for it."

From toolmaker to chief draftsman is the experience of Eric J. Pilblad, 39 Cherry St., Attleboro, Mass. Considering that at the time of enrolling Pilblad's knowledge of English was very limited, his success seems indeed wonderful. Without the help of the I. C. S. he couldn't possibly have risen so rapidly. He says: "When I enrolled I had not been in the country more than a few months, and *my knowledge of English was very limited.* With patience and the assistance of a dictionary I understood my Course without any difficulty whatever. I have advanced from the position of toolmaker to that of chief draftsman, and my earnings have increased 133 per cent. since enrolling. I have never had occasion so far where I needed any help outside of my instruction papers."

Other examples of success attained through I. C. S. are: Farm hand to chief clerk; laborer to assistant engineer; carpenter to draftsman; draftsman to architect; laborer to contractor, and so on — ever the story of up, up, up, with I. C. S. training behind it all.

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That's a question that should mean something to every man. What does it mean to *you?* Are you taking advantage of the bright days of Opportunity by preparing for the dark days of old age; or are you satisfied to stay down while some other fellow steps up? The opportunity to advance is within your reach — have you enough ambition to grasp it?

Surely, if thousands of other men have won success through I. C. S. training, *you* can do the same. It costs you nothing to learn how the I. C. S. can help you — nothing for the information and *advice* that a few years ago you couldn't get for any amount of money. You're not too old. Lack of capital is no hindrance. It doesn't matter how much or how little schooling you have had. Distance, occupation, or place of residence need not prevent you. There are no embarrassing stipulations. The I. C. S. fits its method to your particular case. It helps you *in your spare time.*

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Please explain, without further obligation on my part how I can qualify for a larger salary in the position before which I have marked X

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Civil Service	Building Contractor
Chemist	Architec'l Drafteman
Textile Mill Supt.	Architect
Electrician	Structural Engineer
Elec. Engineer	Banking
	Mining Engineer

Name_____

Street and No. _____

City_____ State_____

This Coupon is for YOU

THE YOUNG MOTHER

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MR. GARI MELCHERS

AN AMERICAN ARTIST WHO, BESIDES WINNING THE BLUE RIBBON OF ART IN PARIS, IS AN OFFICER OF THE LEGION OF HONOR OF FRANCE, KNIGHT OF THE ORDER OF ST. MICHAEL OF BAVARIA, KNIGHT OF THE ORDER OF THE RED EAGLE, GERMANY, AND NATIONAL ACADEMICIAN, NEW YORK

THE WORLD'S WORK

APRIL, 1908

VOLUME XV NUMBER 6

The March of Events

FINANCIAL readjustment is now in order. Business is seeking its proper level, as the artificial forces of inflation and depression are swept away by the flood of real liquidation or real buying, as the case may be. A few unnatural booms in real estate, stocks, labor, and commodities have collapsed as the supply outran the demand. Undue rates of interest for money and unreal depressions in some kinds of securities and some branches of real property are adjusting themselves to the true conditions that exist to-day.

All this leads to much turmoil, to lessened sales of goods, to extreme caution on the part of those who have money or the credit that would get them money if they wanted it. The careful sailor would sooner lose a little time than risk carrying too much sail while skies are still unsettled. Yet most men, even of the most careful class, feel that the worst of the tempest has passed. Only, we must go slowly, ready for random gusts of wind.

Meantime, our foreign trade is pushing ahead. In January, the total exports of the five leading classes—breadstuff, mineral oils, cotton, dairy products, and animals—reached a total of 128 millions, nearly 20 per cent. ahead of 1907. Much of the gain is due to large increases in wheat and petroleum exports. In February nearly twelve millions of dollars' worth less of foreign merchandise was brought in than in February, 1907.

These two facts, increased exports and economy in the purchasing of high-priced foreign goods, bid fair to build up the balance of trade very rapidly. The spirit of economy shown so sharply in the import trade and in very drastic cuts in the highest grade of clothes, of wines, of jewelry, and of other luxuries, is the very spirit of all others that will tend to the rapid correction of the flagrant errors of 1907.

A NEW ATTITUDE TO WEALTH

OUT of it all comes a new theory of life to the people of America. There is no doubt that one of the most important results of the disturbances of the past year or two, viewed from an economic standpoint, is the new way that the people of this country have come to regard wealth. Formerly, wealth was measured in dollars, and the measure of it was let go at that. To-day we scrutinize most carefully every dollar in the pile. It has come to be recognized that wealth must be considered from the standpoint of quality as well as quantity.

Roughly, the people divide wealth into three classes—inherited, predatory, and legitimate. The public judgment on each of these classes has changed materially within the past two years. Formerly, inherited wealth was looked at with indulgence. The sons of the last generation of millionaires were tacitly allowed to assume luxuries, foibles, and even follies, and no one cared much about it. It is different to-day. We are coming rapidly to the English state of mind in this matter, piling upon the sons of the rich duties and responsibilities to which they are little accustomed.

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THE EAST RIVER SKY-LINE OF NEW

Trinity Church

THE EAST RIVER SKY-LINE OF NEW YORK IN 1882,

THE EAST RIVER SKY-LINE OF NEW YORK IN 1908,

THE GROWTH OF

Trinity Church

From a drawing

YORK, AS SEEN FROM BROOKLYN IN 1796

TAKEN FROM THE TOWER OF BROOKLYN BRIDGE

The Singer Building

Copyright, 1908, by Brown Bros

TAKEN FROM THE TOWER OF BROOKLYN BRIDGE

AMERICA'S GREATEST CITY

Public sentiment approves when it hears that the sons of multi-millionaire railroad magnates have gone to work as clerks at a hundred dollars a month, or donned overalls to help build locomotives at the great works. There is a strong reaction against the horde of drones. Of course, it is nobody's business whether the son of a millionaire make twelve hundred a year driving a pen in an office, or twelve thousand a year holding down a fat sinecure in an insurance office; yet public sentiment has waxed hot about it.

As to predatory wealth, there has always been a strong sentiment against it, but few men defined it carefully. A few years ago the term meant wealth gained in open gambling, in trickery, in fraud. To-day it has come to have a wider meaning. Unjust monopoly, even though legal; extortion, even though veiled in a published price-list; graft, even though endorsed by the board of directors in open meeting, are now called by hard names. The men who have grown great in practising them find it hard to square themselves before the people. The face of the nation, in fact, is set like a rock against them.

The old taunt, that it is hard to convict a rich man of crime, is losing its force. In fact, judging from the tone of the more irresponsible press, we have been at times, and in some quarters, dangerously near the opposite extreme—the condition of the French Revolution, wherein the mere possession of wealth or of property itself convicts of crime. The sober common sense of the people rests half-way between. Wealth improperly gained has come to be a crime, while wealth properly gained is held even higher in estimation to-day than it was before. Legitimate wealth, indeed, may hold its head above the clouds. The man who, like Swift's paragon, "has made two blades of grass to grow where only one grew before," has become, by contrast with the predatory rich man, a national hero. We hear less of the "Napoleons of Finance," and more of the men that work.

For a time it looked as though the events of 1907, with their concurrent flood of exposure, vituperation, and slander, would prove a fertile field for the growth of socialism and anarchy in this country. At this writing, this fear seems groundless. There has come a realization of the responsibilities of wealth, and a growing desire to limit its prerogatives and perquisites; but in the hearts of the people one finds little trace of a desire to change the fundamental bases of our national life. Strenuous, hot, urgent individualism is still the very keynote of our national character. Every great hope that we, as a nation, feel, centres about the individual. Our conquests of to-morrow, as our triumphs of yesterday, are to be the conquests of the great individual. His material reward, if it be clean, will be allowed him, not grudgingly, but gladly.

TWO ENLIGHTENED LEADERS

TWO men prominent in the corporation world have come to stand before the people as leaders in the progress of corporations toward the newer and higher standards of public dealing, as strongly advocated by President Roosevelt, Secretary Taft, Governor Hughes, and other leaders of national thought. The two corporation men who have seen the light are Mr. Elbert H. Gary, chairman of the executive committee of the United States Steel Corporation, and Mr. B. F. Yoakum, chairman of the Rock Island Railroad system.

Mr. Gary has expressed his conviction in these unmistakable terms:

"I know that the reiteration of the oft-stated principles of the President of the United States has increased my feeling of responsibility toward the stockholders I represent, toward our competitors, toward business men, and toward the public, and that our relations have been improved."

Nothing could be franker, and nothing could be more gratifying to those who fight for the rights of the people. Mr. Gary's company, it should be added, has always been a leader in the matter of publicity. Its reports are full and authentic. Its business is done in the open. Its officers have never, so far as one may know, been interdicted from telling the truth. In fact, from this viewpoint, this great corporation has always been a model. Mr. Gary's manly statement gives promise of a continuance of this policy.

Mr. Yoakum is not, strictly speaking, a convert. Many years ago, when he was president of a struggling Western railroad of only local importance, he fought a hard fight for publicity, for truth toward stockholders, for fair dealing with his people. Last July, he wrote for THE WORLD'S WORK a remarkable article, in which he openly admitted past faults on the part of the railroads toward the people, and pointed the way to better things

MR. HENRY FARMAN WINNING THE DEUTSCH PRIZE

HE FLEW ONE KILOMETER (ABOUT THREE-FIFTHS OF A MILE), IN A CIRCLE, IN ONE MINUTE AND THIRTY-EIGHT SECONDS

[*See "The March of Events"*]

THE INLAND WATERWAYS COMMISSION

WHOSE MEMBERS ARE PLANNING THE BEST UTILIZATION OF THE VAST WATER RESOURCES OF THE UNITED STATES

Beginning on the left and reading around the table they are Brig. General Alexander Mackenzie, U. S. Forester Gifford Pinchot, Senator John H. Bankhead, Senator Francis G. Newlands, Hon. Theodore E. Burton (Chairman), W J McGee (Secretary), Senator William Warner, F. H. Newell, Director of the Reclamation Service, and Herbert Knox Smith, Commissioner of Corporations

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and a broader basis of relationship between the people, the railroads, and the Government, both state and Federal.

Recently, in a great speech before a Texas audience, he reiterated his strong conviction that hereafter the railroad must deal squarely with the people — and the people with the railroad. It is almost astonishing to relate that the press and the people of Texas are with him, even though his speech assailed in no measured terms the tendencies and the actual laws that have grown out of the anti-corporation agitation in that state.

Judge Gary is a power in the world of industrial administration. Mr. Yoakum is probably the strongest of the younger school of railroad magnates. It is a refreshing and a hopeful thing to find their sentiments and written words keeping pace with the ineradicable convictions of the nation. It is a good augury for them, for their great interests, and for the country that they serve.

A TAFT AND A BRYAN PLATFORM

A POLITICAL platform is not always made up of declarations that its makers believe to be true or that they expect to see enacted into laws; but it is always made up of declarations which they think will win public approval. If we read the platform of the Ohio Republican convention, for instance, which is the platform of Mr. Taft's state and of his home friends and, therefore, in a sense, his own platform, we get a notion of the ideas whereby they expect to carry the convention and the election. Emphasis was laid chiefly on the following subjects:

The railroad rate law, the strengthening of the supervisory powers of the Interstate Commerce Commission, the prosecution of illegal trusts and monopolies and of evil-doers, both in the public service and in the commercial world.

Such modifications of the currency laws as will provide for the demands of commerce, satisfy the needs of all portions of the country and have at all times the quality of undoubted security.

The reënactment in constitutional form of an employers' liability act.

A limitation in the exercise of the power of injunction, in order to prevent its abuse.

Liberal appropriations for the improvement of waterways and harbors, including the Ohio River and the Great Lakes.

The organization of all existing national public health agencies into a single national health department.

The speedy completion of the Panama Canal and the development, step by step, of popular government in the Philippines.

These, it will be observed, are the particular subjects that have been brought forward and insisted upon by President Roosevelt. Some of them have, of course, been found in Republican platforms for a long period, but they are more clearly expressed and more definitely put forward than in previous times.

The plank about tariff revision has something more than a perfunctory meaning, perhaps, when read in the light of Mr. Taft's definite promise, made more than once, that he will use his influence for revision along protectionist lines. The only specific thing that the Ohio platform would commit the party to is the calling of a special session to revise the tariff.

The platform calls for a reduction in representation from states where citizens are disfranchised — a revival of the old threat to the Southern States. This is probably buncombe, meant to catch the Negro vote and to please the Negro delegates from the Southern States.

So much of this platform, therefore, as has a real meaning is a more than usually clear-cut declaration of the Roosevelt policies, and it is on these that the Republicans expect to win.

II

In a corresponding way, the Nebraska Democratic state convention adopted a platform that may be accepted as Mr. Bryan's. Indeed, it bears his earmarks. It is at once far more radical and far more "centralizing," calling for greater extensions of the function and power of the Federal Government, than the Ohio Republican platform. It approves and demands, among other things:

The prohibition of railroad passes and rebates; the forbidding of any corporation to contribute to campaign funds; additional laws "to make it impossible for private monopoly to exist in the United States; to prevent the duplication of directors of competing companies; a Federal license system for corporations doing an interstate business, the license "to protect the public from watered stock," and to compel licensed corporations to sell to all purchasers on the same terms.

The enlargement of the powers of the Interstate Commerce Commission to "ascertain the present value of the railroads, measured by the cost of reproduction"; the prohibition of "any more watered stock;" and the reduction of railroad rates "until they reach a point where they will yield only a

reasonable return on the present value of the roads."

Postal savings banks; the "protection of bank deposits"; an emergency currency "issued and controlled by the Federal Government," to be "loaned upon adequate security and at a rate of interest which will compel its retirement when the emergency is past."

Anti-imperialism and the exclusion of Oriental immigrants.

The popular election of United States Senators.

An eight-hour working day.

There is an ambiguous or veiled criticism of the United States Supreme Court in the platform's "opposition to the centralization implied in the suggestions that the powers of the General Government should be extended by judicial construction."

Here are most of the things that could be crowded into a platform, among them more radical proposals than either of the great parties has hitherto made. Mr. Bryan's private creed of the Government ownership of railroads is not openly inserted. But the excessive regulations that are proposed would very soon lead to ownership.

The tariff plank is clear-cut; so are the planks favoring a national inheritance and income tax; and these are almost the only clear-cut planks in the whole long and complicated document:

"We favor an immediate revision of the tariff by the reduction of import duties. Articles entering into competition with articles controlled by trusts should be placed upon the free-list; material reductions should be made in such other schedules as may be necessary to restore the tariff to a revenue basis."

This platform is full of socialistic and centralizing propositions and tendencies. It is a platform aimed rather at the organization of the discontented — offering cures for every disease — than at the orderly and well-coördinated body of traditional Democratic doctrine.

THE DEMOCRATIC OPPORTUNITY

THE State Democratic Committee of Minnesota formally put Governor John A. Johnson forward as a candidate for the Democratic nomination for the Presidency, with enthusiasm and with a clear-cut statement of his record, his character, and his ability. They say truly that he can carry every state that Mr. Bryan can carry, and that he has a chance to win several states — perhaps a good many — which Mr. Bryan cannot possibly win.

This movement in favor of Governor Johnson will hardly succeed at the Denver convention; for the party managers seem determined to follow Mr. Bryan to the still further demoralization of their party. But now they will commit this error in the face of a chance to do a better thing. It is no longer true that they must take a twice-defeated candidate because there is no available man. Governor Johnson has, in an unusual measure, that sturdy intellectual character which Mr. Bryan lacks. He stands firmly on a few great principles and he stands at the same place to-day at which he stood yesterday, and he will stand there to-morrow. He has fixed qualities.

These are, in fact, the very qualities in the man that the party now needs in a leader — a sturdy honesty and trustworthiness of mind as well as of intention, the homely virtues of large common sense and a broad sympathy and courage to stand square whatever come. He is a plain, strong, brave, sensible man, who believes in the old doctrines and the philosophy of his party. Yet he would have the confidence of all classes of men if he were President. Those that have would not fear that he would encourage confiscatory or destructive measures, and those that are struggling would find him an honest man of their own class. He is a safe man to have great power and responsibility.

If the Democratic managers could recover from the extraordinary hallucination that possesses them and really cared to lift their party again to a vigorous level and to a winning level at an early time, if not now, they would nominate Governor Johnson. In fact, there is a possibility that he might defeat this year any Republican candidate except Mr. Taft.

REPUBLICAN OPPORTUNITY IN THE SOUTH

PERHAPS the most important and fundamental change that has taken place in the people in any part of the United States during the last ten years is the change that has taken place in the people of the Southern States. The economic difference between five-cent cotton and ten-cent cotton is the difference between rural poverty and well-being; and an even greater economic change has taken place in the towns and cities where manufactures have been developed. The growth and the prosperity of the cotton-mills, of the lumber-mills, of the furniture factories, and of many small industries have put money in the people's pockets and put them in a new mood.

Keeping pace with this spread of well-being, and even outrunning it, has been the building and equipment of schools — from the country school-house to the college; and there has, of course, been a corresponding broadening of thought, of vision, and of sympathy. Take any measure that you will of the sentiment and of the attitude of the people of the South toward the rest of the world and you will find a remarkable change within the last decade. Even in politics, for instance, where the old solidity of opinion is most stubborn and persistent, there have come sharp differences of thought. In most of the Southern states there are two parties that on all local subjects differ sharply, and in some states even angrily. In Texas, for example, there are the pro-Bailey and the anti-Bailey parties, whose differences extend far further than the contest about the continuance of Senator Bailey in public life. In Alabama, in Georgia, in North Carolina, and in Virginia, there are two "wings" of the party that differ as sharply about local subjects as the Democrats and the Republicans differ in most states.

Yet, up to this time, the solid South remains practically unbroken. True, Mr. Roosevelt carried Missouri, but Missouri is still a Democratic state. True, a Republican Senator was recently elected by the Kentucky legislature, but Kentucky also is still a Democratic state. So far as national politics go, the South is yet practically solid; and, speaking in general terms, the Republican party is still a mere gang of Federal office-holders or of Federal office-seekers; and there is little likelihood that the Republicans will win a single one of those states this fall. Their electoral votes, like their votes in both branches of Congress, will be practically solidly Democratic.

II

As a mere matter of formulated party-doctrine, it does not greatly matter in these days whether these states or any others be Republican or Democratic. The platform of one party will differ from the platform of the other party in no essential respect except their difference on the tariff. Each will pledge itself alike to regulate railroads and to punish the predatory rich and to bring a better currency and to do all the present tasks that engage the public mind. There will be much talk as the summer comes about centralization and local government; but the man doesn't live who can point out any concrete difference between the acts of the Federal Government in this regard under one party from its acts under another — unless, indeed, Mr. Bryan should happen to become President. In that event, the power of the Federal Government, if he should live up to his speeches, would suffer an extension such as no President thus far has ever dreamed of.

Why is it, then, that with all the change in thought that has come in the South and with the sharp differences of political opinion that have arisen on local subjects — why is it that the South remains solidly Democratic on national issues, and that we are witnessing the same disgraceful scramble for venal Negro delegates to the National Republican convention that disgraced the years of the Reconstruction era? Why is it that there is not a reputable Republican party in the South?

Such a condition is unfortunate for the South — for a respectable and vigorous opposition is necessary to secure the best government anywhere. It is a disgrace to the Republican party and it is an evidence of the failure of the Roosevelt administration to bring to its organized support the large body of existing opinion that is privately favorable to it. Thus we shall see, in this enlightened time, and after the Negro has been practically eliminated from politics, a body (allowing for individual exceptions) of venal or cringing delegates go to Chicago with votes for a Republican nominee that may be controlled, if they are not actually bought, by cash or by promises or hopes of patronage; and, in a large section of this Union, the Republican party remains disreputable — that, too, where there are thousands and tens of thousands of upright and courageous men who prefer Mr. Taft for President to Mr. Bryan, many of whom will vote for Mr. Taft, but without such organized effect as to change the character there of Mr. Taft's party, or to bring any moral support to his administration or any considerable liberalization of politics in the South. There is no task in political management than has been worse bungled than this. Mr. Roosevelt is popular in many parts of the South. Southern Democrats have supported a considerable number of his policies. You will find on any journey that you may take, through almost any of these states, large numbers of influential men who privately express the heartiest approval of his administration. But few men of

this class will go to the Republican convention or openly ally themselves with Mr. Roosevelt's rump and scrub party in those states.

III

Mr. Taft, therefore (assuming that he will receive the nomination), has an opportunity to do the South, his party, his administration, and the whole country an incalculable service, by avoiding the mistakes of his predecessors in the management of the Southern party problem. If he will disregard the Democratic-Republican line of division as it has hitherto existed there and openly take into his confidence the most influential and the strongest men who stand with him rather than with Mr. Bryan — whether they be Democrats or Republicans on local subjects — and if he will (and can) separate the Federal offices in the minds of the people wholly from the notion of rewards for party service, he can bring to the support of his administration a strong moral force in these states and make his party respectable there; and, when it becomes respectable, it will become useful.

The Southern people are emotional in their political activities, yet somewhat remote, yet somewhat "raw," if you judge by the extreme anti-railway legislation of last year, and such actions; they are yet under the influence of strong and persistent traditions; they dislike the word "Republican"; they have the problem of the races yet associated in their minds with politics in spite of their practical elimination of the Negro and the impossibility of "Negro rule"; but they are no longer in the old party servitude. There are hundreds of thousands of the best men there who will not vote for Mr. Bryan. They have in industry, in commerce, in educational progress, and in most kinds of activity become not only an integral but a progressive part of our country. They are ready to show the same sort of division in national party politics that the people in the Middle West show, and especially are they eager to have their proper part in shaping national policies and in molding public thought. There is a vast amount of pent-up ambition and unused patriotism in them, an eagerness to serve and even to lead. All these qualities and ambitions can be organized into a strong support for such a high and clean man as Secretary Taft, if a little tact and great frankness be used and if the old disreputable organization in the South be discouraged and retired.

Then we may be spared four years hence such a spectacle as the squabbling scrubs that now make up too many of the Republican state conventions in the South — to the unspeakable advantage of our whole political life, and to the moral and intellectual strengthening of the Democratic party itself. In fact, one reason for the abject condition of that party is this long lack of forcible and respectable opposition in the South.

WARSHIPS AND FOREIGN TRADE

WHEN trade becomes dull at home, that is a good time to extend it abroad. Great extensions of our foreign commerce have in the past been made by this principle, and one of the reasonable expectations of this year is the growth of exports of manufacturers.

As regards the markets of South America, it turns out that the voyage of our fleet of warships to the Pacific came at an opportune time. The advertising of American wares was not mentioned as one of the reasons for this voyage; but it may turn out that this very prosaic but important service will be the best concrete result of Admiral Evans's much-criticized adventure. At every important South American port, the fleet, our navy, our Government, our institutions, our people, our aims, our industries, our trade — every conceivable thing that is ours — have been discussed as many of these subjects were never discussed before; and they have been discussed in a most favorable mood — without suspicion of our political and diplomatic intentions. To put one result of all this into plain trade language, it has been a big advertisement of everything American. One exporter in New York reports that his South American correspondence has increased fourfold since the fleet reached Rio Janeiro.

If, therefore, our great armada and its gallant commander (this is the vocabulary, as nearly as we can catch it, of the objecting rhetoricians) — if our great armada and its gallant commander are to perish about May by the guns of the invincible Japanese (is a Japanese ship not hovering on the horizon of the fleet all the time?) — if our great armada and its gallant commander, as we were saying, are to go down before a surprise attack just before they reach San Francisco, we may have at

least the sordid satisfaction of knowing that they did something to stimulate trade with the South American people who, contrary to all objecting theories, have been silly enough heartily to welcome Admiral Evans and to express their pleasure that our warships visited them. And it does seem that trade follows a fleet of sixteen warships.

THE GREATEST ENTERPRISE OF OUR TIME

IF YOU were asked to select the American work or enterprise or event of the first years of this century that is likely to be remembered longest and most gratefully, you would probably guess best if you should say that it is the systematic preservation and reclamation of the natural resources of our part of the continent — that great system of works which includes irrigation and forest reserves and now the definite formulation of a comprehensive plan of inland waterway improvement. For it is not too much to say that this comprehensive plan — it is all part and parcel of the one great idea — is the most helpful and far-reaching physical enterprise that our Government or our people have in hand.

The remarkable group of men who have zealously worked to carry out, to formulate, and to explain these great plans have linked themselves to a task that will require the devoted work of a long series of successors. We shall not fully carry out the waterway work explained by Dr. McGee in this number of THE WORLD'S WORK for a good many decades. It will, in fact, require the life-time of one working generation to get a full understanding of it into the minds of the whole people and of the politicians. But it is a project which, once understood and once fairly begun, will not be neglected; for it will demonstrate its value at every step.

When a man once comes to understand the whole commercial, economic, agricultural, sanitary, and æsthetic value of a stream and of a tree, he becomes a changed man; and nothing can throw his life and his thought back to the old, careless level of indifference to them. He sees a higher reach and a greater breadth of life for a people who preserve and wisely use them. The essential great policy, therefore, that has been shaped and is now taking clearer and wider shape under President Roosevelt and Forester Pinchot, will become a settled and continuous policy of our Government, national, state, and municipal.

It will become a fundamental part of the people's thought so soon as they wake up to the advantage of possessing the most richly endowed portion of the earth. In a word, this comprehensive movement of which we now read and write and talk with a dawning appreciation will work a new era in the natural history of the continent itself and in the thought and development of our people, and bring a new attitude of mind toward the earth and the culture of it and the enjoyment of it as a home for a saner, richer, life, to say nothing of its larger yield, its more healthful qualities, and the incalculable addition to our wealth.

THE HOURS OF WOMEN'S WORK

THE Supreme Court of the United States has declared the right of every state to make laws that shall limit the number of hours that a woman may work in mechanical labor. This decision (and no saner or wiser decision has been handed down by this court in many years) sustained the right of Oregon to make a law limiting to ten the hours of a woman's work. In handing down this decree Justice Brewer said:

> "Legislation for the protection of women may be sustained, even when like legislation is not necessary for men, and could not be sustained. . . . The limitations which this statute places on her contractual powers, upon her right to agree with her employer as to the time she shall labor, are not imposed solely for her benefit, but also largely for the benefit of all. . . . The difference [between the sexes] justifies a difference in legislation and upholds that which is designed to compensate for some of the burdens which rest upon her."

This is the language also of humanity, and of common sense. How well it squares with the platform of those who demand equality of the sexes and equal rights may be left to them to find out. That it squares perfectly with the sentiment and the judgment of the most enlightened races may be inferred from the fact that it is strictly in accord with the laws of Great Britain, Germany, and most of the other civilized nations that have legislated upon this all-important matter.

There are now nineteen states in the Union that have embodied in their statutes such legislation for the protection of women. In New York, the state of all others where women work at mechanical trades, a law to this effect was

passed in 1899. Last June, the Court of Appeals of this state declared the law unconstitutional by a vote of 3 to 2. That decision has not yet been appealed to the Supreme Court. In the light of the present ruling, it is not too much to hope that in some way or other such an appeal may be taken, so that the Federal judges may bring New York again into line with the laws of civilization at large.

The decision also paves the way to a sweeping reform in the South and the Middle West. The list of states that have adopted this enlightened law does not include Ohio, Illinois, Iowa, Kentucky, Tennessee, Georgia, Alabama, Florida, Minnesota, California, Texas, or Arkansas. Can it be that these states, many of which boast themselves not less chivalrous than the nineteen that protect their women, have been waiting for some such decision on the question of constitutionality? Shall it be said that Virginia, Maryland, South Carolina, Louisiana, and Oklahoma are the only Southern States in whose courts a woman seeks, not in vain, protection for her weakness?

That, in rare individual cases, it will be a hardship to limit the hours that a woman may work in a factory may be taken for granted. The decision of the Supreme Court sweeps aside this objection, on the ground that such work, even though sought by women, is inimical to the best interests of the race at large. The sober common sense of the people will approve that ground, and applaud the humanitarian spirit of the decision, no matter how the advocate of the sweat-shop and the factory may rail against it.

A MARKET-PLACE WITHOUT SPECULATORS

THIS is an extract from a conversation with an officer of a big corporation whose head office is located in Wall Street:

"Every day since the first of February, I have taken a midday walk about this district. My journey includes the two blocks of Wall Street from Trinity Church to William Street, and the four blocks of Broad, from Cedar Street to Beaver. On, the first day of February, I counted sixteen 'to let' signs on those blocks. On the twenty-sixth, I counted fifty-two. These are tombstones set up over financial corpses. It's a cheerful thing, living in the great financial centre of the country these days!"

This fairly epitomizes the sentiment of the market-place during the mid-winter months. An air of desperate gloom pervaded it. The cheap eating-places were crowded at noon; the high-priced restaurants were relatively deserted. A dozen or more very expensive uptown offices were cut off by the brokers, because they did not pay. Many of them would have liked to close their downtown offices, too, but they could not. Their clerks were reduced to the smallest number. A man who lost a position in Wall Street in those days found it profitable to take a long rest in the country. He had little or no chance to make a new connection in his old haunts.

Of course, some of this gloom was mere hysteria, but a man may be pardoned for being somewhat hysterical when he contemplated a debit balance growing every day, when he looked at the melancholy remnant of a once-prosperous investment business and reflected that the income from it would not pay his office-rent.

In normal times, no genuine Wall Street man talks out loud about receiverships and bankruptcy. If he has suspicions, he whispers them in the privacy of his office or his club; but, in those days, you might have heard big brokers and bankers and active financiers talking on the street corners about the "prospects" of this road going down, of that firm being forced to liquidate. of this other company being compelled to cut its dividend. This conversation about misfortune ran about the streets and alleys of the market-place. In normal times it clothes itself in innuendo and slinks in the shadowed corners. A printed hint of a receivership is in usual times wont to be met by a haughty threat from the legal department of the interested company, and talk of libel suits would fill the heated air. But during these dull months the haunted corporation sent its president to the offending newspaper, and he said: "Please don't say that; it injures us very deeply!" Manners suffered a great change.

Suspicion, always a strong force in the market, swept most other forces out of the way. An officer of a casualty company said that his company had received more requests for the insurance of deposits of strong and solvent banks during the past five months than during any previous two years of the company's history. The bonding companies are doing a rushing trade. The time-honored "gentlemen's agreement" has fallen into desuetude. Its place has been taken by an

iron-clad contract, strengthened, in minor cases, by a surety bond. The old free-and-easy habits that made the higher circles of Wall Street finance a marvel to the plain man have, in large part, disappeared.

The deeper meaning of all this is not as gloomy as it appears. The fact is, that when gloom settles upon Wall Street, the very best business of the market-place tends to grow rather than to diminish. The thing that causes melancholy to become the daily portion of the average Wall Street man is the cessation of trading in stocks, or of speculation. Yet that very thing, in nine cases out of ten, gives a new impetus to the buying of bonds and to the buying of good stocks for cash by the "people outside" — that great horde who in the heyday of the market are scorned by the trader, but who in days of gloom listen with enforced patience to the groans of this same trader and smile. The old-line bond houses and the true investment houses do a business that gives no deep discouragement; and, but for the idle traders that thrive on speculation, Wall Street presents somewhat the appearance that it would have if selling on margins and all forms of "gambling" were prohibited.

ABOUT PROHIBITING STOCK-GAMBLING

MR. WILLIAM P. HEPBURN, of Iowa, has introduced a bill in the House of Representatives to tax the transfer of sales of stock made on or after June 1, 1908, 50 cents on every $100 share, the tax to be paid by a stamp affixed to the certificate.

This bill, of course, is drawn to stop gambling in Wall Street, for the tax is prohibitive. Probably more than 75 per cent. of the transactions on the New York Stock Exchange are mere "trading," that is, buying or selling stocks with an idea of taking a profit ranging from 12½ cents to $1 a share, or even merely "balancing up," and it becomes evident that such a tax would probibit more than three-quarters of the "business" transacted on the exchange.

Now there is no doubt but the mere gambling in stocks and grain ought to be stopped in the interest of public morals, just as gambling on horse-races ought to be prohibited; and there is little doubt that a time will come, with the steady growth of the public conscience, when these demoralizing practices will cease. But the prohibition of stock-gambling in Wall Street is not as easy and obvious a task as one might infer from reading Mr. Hepburn's bill. Nor is it probable that it will now become a law. For so long a step forward in morals is seldom taken at once; and there are serious economic difficulties in the way of the sudden coming of such a change.

Let us suppose that three-quarters of this speculative business should be swept away after June 1, 1908, what would be some of the immediate results? The most costly square mile of territory in the world is probably the section that lies between Cedar, Beaver, William Streets, and Broadway, New York. This covers the heart of the financial district. Its enormous value is due to the use that is made of it. The Hepburn bill, become a law, would destroy that use immediately. For it must not be supposed that the strictly investment business would stay when the marginal trading is driven away. What buyer of 1,000 shares of stock would do his buying in Wall Street and pay $645 for the service he received, when he could have his order executed in London for $148, including the cable tolls? The bill would utterly destroy the present uses of the financial district.

New York City is to-day struggling along perilously near its debt limit. Such a law would cut nearly, if not quite, half a billion dollars from the valuation of the square mile of territory referred to. Could New York stand it? The question may be referred to Mr. Metz, the comptroller of the city.

That a very large part of the terrific gambling in stocks that has marked the past ten years of prosperity may well be eliminated is a truism. But a bill that directly threatens a financial cataclysm with its results to the guilty and innocent alike, whatever great moral force it may have, will not at once overcome these prodigious physical and economic difficulties.

Yet the path is clear enough before our legislators. Germany blazed it wide and straight in the Bourse legislation of 1896. Yet, in spite of the care and exactness used in framing that law, the very classes it was aimed to assist are clamoring loudly for its amendment. The clearest lesson from the experience of Germany seems to be a lesson against wholesale restriction of market functions. We shall at some time have a clean-cut law to destroy the gamblers in Wall Street, to stop, by Federal act or otherwise, the juggling of corporation accounts, the corruption of our

commercial banks, the luring of our youth into bucket-shops and gambling offices of many sorts; and the country will give it hearty support. But the businesses that have been created by thousands of men, many of them working a lifetime, without violation of the laws that have existed during the period of the labor, will not suddenly be wiped out. This great reform must come after long agitation and careful preparation of regulative measures.

THE MAN WHO WAS SLOW

THIS is a simple story, from a country newspaper. It concerns an old man named Burrows, who built a little iron foundry in a small town in the Middle West nearly thirty years ago. He was slow and in those days his town also was slow. He made a good living out of the foundry, finding his trade in the country round about. He married and had one son, whom he put through the local schools, then into college, then through a medical school, and finally into a good purchased practice in a nearby town.

About the time this son was graduated, the town had a business boom. Every factory built additions, every store received a new coat of paint. The nabobs of the place began to call business "commerce," and factories "plants." All this did not disturb the man who was slow. Finally, a few of his neighbors, who disliked to see such a good chance going to waste, made up what they called a "syndicate," and offered the old man $20,000 for his foundry. He figured over it awhile, then accepted it, and invested it in farm mortgages at 5 per cent. This investment gave him $1,000 a year, and he settled down to dig in his garden.

The foundry immediately became the one fond, bright hope of the town. It was quickly reincarnated into a stock company with $20,000 of bonds and $30,000 of stock. It bid for and was awarded a contract to make tires for a buggy factory in a bigger town not very far away, and spent a few thousand dollars in adding a new wing and new machinery to make these tires. Its pay-rolls doubled within twelve months. In fact, it ceased to be a foundry, and became an "industrial."

All these things came to pass only a few years ago. The sad event of the tale happened a month ago, and was described in the local newspaper. It was — so the current story has it — all the fault of that buggy factory. It went down in the "smash" of last autumn. With it went the best of the business of the foundry. The buggy company owed a few thousand dollars to the foundry, and the directors of the foundry had relied on this money to meet a debt due for iron. Consequently, the poor old foundry was sold by the sheriff. The name of the buyer was Burrows, and he paid $5,000 cash, the balance in six months. The total realized at the sale, which the local paper describes as a "slaughter," was only $18,000.

The local newspaper says that this was "bad luck, no more." True. But one cannot help thinking, as one reads the news, that after all there may be some truth in the ancient fable of the tortoise and the hare. Yet everyone is at liberty to draw what moral he will.

THREE LINKS OF AN INTRICATE CHAIN

IN THE mountains of Bohemia, in Eastern Europe, there is a little region called the Erz-Gebirge. Years ago the people there built up a very good trade in gloves with America. Their annual product grew to about 12 million dozens of gloves. During the panic of last year, the American buyers canceled their orders and every factory in the Erz-Gebirge was shut down. Thousands of men, women, and children were thrown out of work. Hundreds of them are starving to-day. They do not understand American finance and they had no part in the events that brought about the panic, yet they pay the penalty merely because they are a part of the commercial organism whose nerve-system now reaches almost every part of the globe.

Again, a man in Europe late in February made a guess at the amount of wheat that Europe would require during the next six months. At the same time, another man made a guess at the amount that Argentina could supply. The first estimate was higher than had been expected. The second was lower. The result was that May wheat in Chicago jumped up 8 cents a bushel, adding about 60 million dollars to the nominal value of the American wheat crop, and adding about $120 to the net income of the man who last year planted his hundred acres to wheat.

Or, again, it surely does not seem to be any concern to the farmer in North Dakota that more or less sportsmanlike hunters down in Louisiana find fun in shooting robins. Yet

the Minneapolis *Journal*, commenting on a statement that more than a million robins have been killed this winter in Louisiana by these hunters, says that the farmers of the Northwest will suffer seriously, because the robin is a destroyer of pests that prey on the crops. A similar statement comes from those who are making a fight against the cotton-boll weevil to whom also the robin is a help.

There is, then, a real need for that very ambitious philosopher who was laughed at for spending time in making a plan for "the better organization of the whole world."

SUBTERRANEAN AMERICAN CITIES

A TUNNEL (a "tube" they call it) was opened some time ago under the Hudson River between New York and New Jersey, and others will soon be open; and the tunnel from Manhattan to Brooklyn will soon reach the Long Island station. These denote the coming of a new and remarkable phase of urban life.

A man may live in New Jersey, twenty miles from New York, or in upper New York, or on Long Island, and go to the city every day, transact his business, do his shopping, have his luncheon at a great uptown hotel, visit a hundred different offices of corporations, lawyers, business firms, and return at night to his own fireside without having once been outdoors except in his drive to and from the station in his own home town; for into the subways and the tunnels open half a dozen of the largest office-buildings in the city. Through them, by covered passages and corridors, open a dozen more. Most of the great buildings that front on lower Broadway extend to other streets and there are archways or corridors that lead to other buildings. The whole Wall Street section is a labyrinth of covered ways. The subways themselves join one another, making one great subterranean artery through which the streams from Jersey mix with the streams from New York and Brooklyn.

Many of the large department stores will also have direct entrances into the tunnels. One of them has such entrance to-day. It covers two blocks and maintains a private tunnel under a street for the linking of the two. Practically everything needed for housekeeping may be bought in this store, so that the timid housewife from far New Jersey, New York, or Long Island may come to her market and transact all the business that she desires and return to her home without ever setting foot on the dangerous and terrible streets of New York.

The subways and tunnels in New York are for the handling of the people. In Chicago, the main streets have a system of underground tunnels for freight traffic. All the great stores open into it. The street wayfarer sees no lines of drays transporting merchandise to the big retail stores, no tangled mass of trucks taking away the out-bound shipments. A demolished building in the business section of the city is not carted away on laborious wagons, stalling the traffic for blocks around. It sinks slowly through a small hole in the ground, and disappears. Its remnants emerge, miles away, piled in the little cars of the subway, dustless and almost noiseless.

These changes mark a new era in the two greatest cities on the continent. The new York experiment — if one may yet call it that — is the more picturesque; but the Chicago experiment is not far behind it in economic importance. One result already visible is the taming of the once tameless teamsters. Even more important, it has made downtown Chicago almost fit to live in.

THE GROWTH OF THE PUBLIC CONSCIENCE

THE public conscience does move forward generation after generation, and many practices that were not regarded as reprehensible in the days of our fathers shock us. For instance, the recent sale at auction of treasures taken as loot from Chinese palaces during the Boxer War stirred indignation in many right-thinking men. These treasures were sold by the widow of a late Minister to China and it was explained that they were bought from dealers and that if they had not been bought by one person they would have been bought by another, and that it was impossible to restore them to their rightful owners.

The looting, it was recalled, as a further explanation, was unavoidable. The whole city of Peking was at the mercy of an army composed of soldiers of many nations and it was inevitable that they should plunder, especially since international jealousies prevented effective discipline. But the explanation, true as it is, is beside the point. The fact remains that these things were stolen; and the conscience of our time takes in a wider range of acts than

the conscience of the time of Lord Elgin. It was once considered proper to pillage in the land of an enemy. But the protests and a very general feeling of shame that this public auction of stolen things provoked — although they were purchased by the person for whom they were sold — show that we are more sensitive now. When our Government remitted a large part of the indemnity to China, this action met the universal approval of the people. The same people, by the same reasoning, regard it as a shameful thing that looted Chinese treasures should be sold and bought; and no explanation can take away the shame of it.

POST-MORTEM FAIRNESS

THE past six months has been a period of more than usual gossip, scandal, and even libelous talking, especially in commercial and financial circles. Consider, for example, the anonymous attack by telephone on several well-known and perfectly solvent banks for the purpose of creating an after-spasm of the panic and to help some "bear" plans. Why is it, do you suppose, that men and magazines that gossip so seldom repeat statements that do other men good rather than harm — at least till the men who are talked about are dead? Can there be truth in that terrible statement that in the misfortunes of a friend there is something not entirely displeasing to us?

As a counter-irritant to dangerous gossip, THE WORLD'S WORK ventures to relate a true story which concerns the present managers of the Standard Oil Company — aware, of course, that even a sober and God-fearing magazine can publish nothing about the Standard Oil Company that does not show lurid wickedness without incurring suspicion; and this story comes from a source that is in no way connected with the Oil Company. The information, therefore, is independent and "untainted."

Once upon a time a business man built up a successful manufactory for making a product in which the Standard Oil Company was a competitor. Now, if you expect to read that detectives haunted this factory to find how great its product was and where it was sold and that the man's business was ruined, you must stop here; for the simple fact is, his business went on peaceably and profitably. It even grew so fast that the proprietor wished to increase his factory. To do this he desired a large amount of new capital. He suggested to the Standard Oil people that they purchase an interest in his factory and put in the necessary capital. They did so and the profits grew.

Now comes the disaster of the tale — as usual; but it comes in an unusual way, as such tales go. The manufacturer went into the stock market and played the old game of "double or quits," and the cards at last fell "quits." The victim was now at the mercy of his great competitor and partner.

The unfortunate manufacturer could save himself only by securing another large sum of money. He went to the Standard Oil people and told the whole story frankly, and asked if they would buy out his interest in the factory and, if they would buy, at what price. They offered at once to buy it at the same valuation at which their share was valued by them on their own books. This was its actual worth and the sale was made and the money paid at a time of great financial distress, and the needy speculator was able to prevent disaster from his speculations.

There is no moral — unless you choose to conclude that no man, nor set of men, can possibly be so extraordinarily and consistently wicked as talk and type in the gossip of suspicious times would have us believe.

TWO CREEDS ABOUT PUBLICITY

A MAN of affairs, of a wide acquaintance and of much practical experience, has asked THE WORLD'S WORK why the periodical press, which is so ready "to publish things about men that do them harm and so seldom publishes anything about a man, in public or in private life, or about a firm or a corporation that reflects any credit on the subject."

The reason is that what the newspapers — especially the more sensational newspapers — regard as "news" is information or rumor that gives some surprise. It is no surprise that a good man remains good, and there is no occasion for saying so — at least in the ordinary course of events. But, when a good man becomes a rascal, the announcement of his fall gives a shock — that is news. This is an explanation, mind you, not a justification.

But a mention of the subject enables THE WORLD'S WORK to remind this inquiring gentleman that this magazine, in common with others of serious aim and balanced judgment, has always held the opposite creed and, we hope, practised the contrary doctrine

— namely, that the most interesting as well as the most helpful things in the world are the good things that men do; and it is these that emphasis has surely been put on in these pages, and in the pages of many other periodicals that hold service above profit. Violent publicity of wrongdoing may have its disciplinary and deterrent value; but the progress of society is promoted not by fear but always by example.

PEACE AT THE CANNON'S MOUTH

THE makers of big guns are less imposing than The Hague Conference in numbers and in dignity, but they are turning out arguments for peace that are likely to be effective. Mr. Hiram Percy Maxim, of Hartford, Conn., a son of the renowned inventor of the rapid-fire machine-gun, has recently patented a device which renders noiseless the discharge of any firearm to which it may be attached. A detachment of troops may hereafter go into action equipped with repeating rifles that do their destructive work without either smoke or sound. If this silent form of destructive work be realized, the demoralizing effect of invisible sharpshooters will be intensified, for it is the alarm and the excitement that nerve an army in a charge upon an enemy's guns. It will require strong discipline and a fine fibre of manhood to hold in line a regiment whose numbers are being decimated by an unseen foe doing its work as noiselessly as a plague.

In the same week came an announcement from Brooklyn that another inventor — Mr. Frederick Bangerter, whose inventions in mechanical lines have previously been awarded medals in Europe — has completed a gun that can discharge two million bullets in an hour. It is, therefore, a weapon for wholesale destruction, while Mr. Maxim's invention may be called a retail device.

The usual secrecy that veils a new weapon screens Mr. Bangerter's gun, but he claims for it much that is as marvelous as its capacity. These two million bullets an hour, it is claimed, are hurled at a velocity of 3,000 feet a second without noise, without smoke, without flash, without fumes. No powder is used and the cost of firing is placed at $10 per million bullets. The present method of firing that number is said to cost about $20,000. As the inventor is offering his secret for sale, he expects to demonstrate the ability of his gun to accomplish what he claims.

After all, it matters not whether this be the weapon of the future. If investigation prove that Mr. Bangerter has not succeeded in doing what he claims, he or some other man will eventually succeed.

The possession by one nation of a weapon that is immeasurably superior to all others is a powerful aid to that nation's diplomacy at a time when relations are strained. The temptation to use the advantage for "bullying" is held in leash by the fact that nearly every great power holds some secret of offense or defense. With rapid strides, mankind is advancing toward the point where wars on land or sea must be brief and fearfully destructive. Moreover, the battle is no longer to the strong. The greatest battleship is haunted by the fear of a new kind of submarine; defenses hitherto impregnable may at any moment be rendered weak by some new invention. With the increase in the destructiveness and in the chances of war, therefore, we have a more hopeful outlook for peace.

These inventions, if they prove themselves practical, may go far to bring to pass the prediction made by Mr. Stephen Phillips in a poem on the new century (written at the close of 1900). The Spirit of the New Century speaks:

. . . I will make of your warfare a terrible thing,
A thing impossible, vain;
For a man shall set his hand to a handle and wither
Invisible armies and fleets,
And a lonely man with a breath shall exterminate armies,
With a whisper annihilate fleets;
And the captain shall sit in his chamber and level a city,
The far-off capital city.
Then the Tsar that dreameth in snow and broodeth in winter,
That foiléd dreamer in frost,
And the Teuton Emperor then, and the Gaul and the Briton
Shall cease from impossible war,
Discarding their glittering legions, armadas of iron,
As children toys that are old.

THE COMING STRUGGLE IN ASIA

THAT the treaty of Portsmouth, which was supposed to end the Russo-Japanese War, was in effect only a protocol, is the profound conviction of Mr. B. L. Putnam Weale, an Englishman who has studied the situation in the Far East for many years and who has

recently gone the length and breadth of the continent. His book on "The Coming Struggle in Eastern Asia" confirms the belief of many that three great powers — Russia, Japan, and China — are massing their forces and measuring their strength for a contest that will decide the mastery of the Pacific shores of Asia.

I

It is a wonderful picture of Russia's greatness that Mr. Weale has drawn, a picture whose setting makes the Czar in St. Petersburg appear like a postage-stamp mounted in a frame designed for an oil-painting. Here is an empire that has thrown itself clean across the continent of Asia that it might reach the open water of the Pacific. The Russian flag floats from 30 degrees east of Greenwich to within sight of the American shore, and from the fiftieth parallel to beyond the Arctic Circle — the greatest unbroken stretch of empire that the world has yet seen. Northward from the Amur River, which itself is far to the north of Vladivostock, lies nearly one-fourth of the continent of Asia, with hundreds of thousands of square miles not even explored. The Siberian province alone — excluding two and a half millions of square miles within the frozen zone — has a thousand million acres of agricultural land, six times the combined area of Germany and France.

The same magnificent distances confront us when we turn from territorial expanse to navigable water and steel rails. At the station in Vladivostock, for instance, a sign-board reads: "From Vladivostock to St. Petersburg, 9,222 versts," —6,086 miles—and over this long reach of single-track railroad Russia was sending ten trains a day in either direction toward the close of the war. The Government works, with half a million railroad employees on its list, can make and equip 500 locomotives and 30,000 coaches and freight-cars every year. Its constructing engineers have shown a capacity for laying track in the face of obstacles with a rapidity that has astonished experts all over the world. Not yet has the Russian merchant vessel become a factor in the Far East, but the natural facilities are held in its own hands. The great Amur, leading into the Pacific, is navigable for more than 2,000 miles, and there are three great rivers running to the northward, the Yenisei, the Obi, and the Irtish, along which steamers may travel for distances equally great.

Beyond the possibilities of the uncut forests, the unworked mines, and the unbroken fields of this vast northeastern world are the latent possibilities of the slow-plodding, stolid Russian people. The Slav is not an Oriental, and all the ages to come will not make him so. Stand this ruddy, herculean mass of animal strength alongside the lithe, sallow-skinned Japanese, place the blue-eyed, flaxen-haired Russian girl side by side with the Chinese or the Korean — as they stand in Manchuria to-day — and the contrast is startling in its distinctness. These Russians are the sons and daughters of men, and they cannot be turned back by a climate so severe that, along the Amur, the thermometer drops to 60 degrees below zero in winter and the ground is frozen two feet below the surface in the middle of summer. Two other important facts about these European invaders must profoundly affect the future of Asia — these are the sons of toil and they breed fast.

II

But, side by side with the Russian bigness in the Far East must be placed the Russian littleness and inertia. Horses have replaced man-carriage in Vladivostock, but the dust of its streets is sprinkled by stalwart, bearded men who dip kerosene cans into a tank of water. Half a hundred merchant vessels ride at anchor in the spacious harbor, but no effort has been made to clear away the menace of hidden mines. With vast wheat-fields stretching across Manchuria and with nine flour-mills in Harbin, having a capacity of 2,000,000 pounds of flour a day, the bread of the coast-line comes 5,000 miles from points beyond the Pacific. In the city of Harbin, with 80,000 Russian inhabitants and within whose limits a man may drive for twelve hours without doubling on the trail, there is but one public well, and here all the wheeled traffic must pay its toll.

It is this incapacity to grasp the significance of present problems and grapple with their difficulties that makes the Anglo-Saxon dubious about the destiny of the Slav in a continent where he must always be numerically overwhelmed by hordes of Orientals who have awakened to see a great light.

III

More remarkable than the Russians in their activity and more impressive in their

mass, the Chinese must be reckoned with in Manchuria and the Northeast. With the Russian occupation came the restoration of law and order in Manchuria, and the Chinaman needs nothing more than the open door. In Vladivostock, the coolie is working side by side with the Russian bricklayer, and the Chinese merchant rides in a carriage with a Russian driver. The Chinese guilds are all-important factors in the commercial world, and junks from the south crowd the docks along the water-front. In Harbin, the other Russian stronghold, there are entire streets of Chinese stores. It is the coolie who lays the foundations of the new buildings and mans the grain-boats that sail along the river.

The Chinaman is everywhere, from the Baikal frontier to the Pacific. All the country west of the coast-line and northeast of Korea is dotted with his villages. He is the farmer of Manchuria, the handy-man, the beast of burden. In numbers estimated at from ten to twenty thousand, he is peacefully at work along the Russian side of the Amur, and he is following the lumbermen into the wilderness, sowing his grain among the stumps of the dismantled forests along the railroad. Like transplanted Bermuda grass, he is taking firm root in Russian soil; and, if the time for his dislodging comes, who knows that he will have forgotten that the land in which he is an alien is really his own?

IV

The third factor to be reckoned with in the contest for this vast empire is the Japanese. Inscrutable, mathematical, tireless as the ant in activity, with a vision of empire luring him on, he has begun to paint the mainland with his national colors. Korea has been obliterated from the map, and the Koreans are moving across the Russian border. Along the line of his advance, the Chinese are learning that "the Orient for the Oriental" really means "the Orient for Japan" — for the "dollar-mark" of the *yen* is the seal of every transaction they have with him. The Japanese is no longer regarded as "the champion of the East," but is gradually assuming, from the Chinese point of view, the aspect of a menace to the East. Unless present indications be misleading, Japanese teachers and advisers will presently find themselves as unwelcome in China as European advisers are unwelcome in Japan. Lacking the frankness of the white race and more cunning in his unscrupulousness, the Japanese is suspected and feared by China — and there is the lingering sting of the Chino-Japanese War and the present example of Korea to make the Celestial pause.

War scares are of frequent occurrence in Vladivostock and even the Chinese paper in Harbin takes a hostile attitude toward the Japanese. The nation that complained so loudly against the invasion of the Russian is now beginning to see that the new invader from across the Yellow Sea is more relentless and more resistless than the old.

The situation is likely to become more complicated as the months pass, for the activity of all the nations involved is incessant. The Russian port of Vladivostock is fortified with seventy-six forts, and guarded by a whole division of troops. Military forts are distributed all along the frontier and the Trans-Siberian Railroad is preparing to double its train capacity. At Harbin is a military hospital-town with accommodations for 90,000 patients. Meanwhile, Japan is building warships that surpass the *Dreadnought* in size, speed, and armament, at the same time thrusting armies and guns into its mainland possessions. China, conscious that its own destiny is involved in the rivalry of Russia and Japan, is training the only real army that it has ever had. Meanwhile, the *entente* between Russia and China is daily becoming more cordial. England's alliance with Japan will end in 1915, at which time, if not before, changes in the map of the Far East may begin.

It remains to be seen whether the guiding-star of the Japanese people is destiny—or madness. At the present time, it is significant that we have ceased to hear of "the Anglo-Saxons of the Far East." Waning prestige has been followed by distrust and something akin to racial hatred in many parts of the world where the Japanese were formerly idolized, and this feeling is no longer confined to the white race.

Meanwhile, here is an ideal opportunity for The Hague Tribunal to demonstrate its practical efficiency.

A NEW LEADER IN ENGLAND

THE virtual retirement of Mr. Campbell-Bannerman, whether it be followed immediately by his formal retirement or not, points to an important change in English politics. As to his successor, there can be

little doubt. The present Chancellor of the Exchequer, Herbert Henry Asquith, has long been clearly indicated as the next leader of the Liberal party. Of the two men, Mr. Asquith is the greater intellectual, as he is the greater motive force, but whether he will be equally successful as a leader is not so clear. Though more brilliant as a thinker, more alert and ready as a debater, more competent as a financier, it is not certain whether any or all of these qualities will make up for the personal charm, amiability, and pluck of the old leader.

Sir Henry Campbell-Bannerman, affectionately known to Englishmen as "C. B.," has had a long public career. Forty years ago he went to Parliament representing the Stirling district and he represents it still. It is thirty-seven years since he took his first governmental post and he has held a cabinet position most of the intervening time. For nearly ten years he has been leader of his party. Few, if any, men in England can be compared to him in length or variety of parliamentary experience. It is then no small loss which the Liberal party will sustain in his withdrawal.

It will put Mr. Asquith to his best powers to fill "C. B.'s" place. Yet he is no raw youth; for the young and untried find little advancement in English governments. The future Premier is in his fifty-sixth year, and has sat in Parliament for twenty-two years, a majority of the time on the government benches. Of his capacity, brilliancy, courage and energy no one entertains a doubt. The strength of accomplishment is his; if he have also the happiness of method, his party and his country may welcome him in the place of Premier with a very hearty welcome.

THE WIDOW AND HER LEGACY

IN FEBRUARY, THE WORLD'S WORK received nine letters from trustees and executors of small estates alone, asking advice concerning investments. In most of the letters it was made clear that the writers recognized their responsibilities, and desired to make really conservative investments of the funds left to their care. In two letters, however, the inquiries concerned securities that are utterly unfit for conservative investment. One writer wanted to buy a copper mining stock, using practically the whole estate for the purchase. The other sent a list of fairly good industrial stocks, yielding over 8 per cent. on their present dividends.

This subject is one that is vital to thousands of innocent people all over the country. The investment of a legacy or of life-insurance funds or annuities created against the death of the wage-earner of the family, means the happiness or the unhappiness of women and children. The large majority of such legacies are left to the discretion of some friend of the family, or of the widow, without adequate restrictions on the exercise of that discretion.

Much of the fault lies with the maker of the will. A fund left in this way should not be entrusted to the discretion of anyone without some definite instructions. The gist of these instructions should be about as follows:

(1) No stocks of any kind must be bought with this legacy.

(2) No real estate must be purchased except for a home.

(3) The investment must be restricted to first-mortgages on real estate, not to exceed 60 per cent. of the market value of the property; to bonds secured by mortgage on going concerns, railroad or industrial, of good reputation and of long standing; to municipal bonds of the state in which the testator lived; to deposits in the banks of the same state; to certain other securities specifically named in these instructions.

Even these instructions are not so strict as they might be. If one leave a sufficient estate properly to support and educate those dependent, it is usually satisfactory to stipulate that the money shall be invested only "in such securities as are legal for the investment of trust funds in this state." This usually means that the savings-bank law of the state shall guide. This has two objections, the first that the savings-bank laws of many states are utterly inadequate; the second that the trustees cannot get much more than 4½

per cent. per annum in such investments. The first difficulty can be obviated by citing the laws of other states, usually Massachusetts, Connecticut, New Hampshire, or New York. The second had better not be avoided.

Failing such definite instructions, in what may a trustee invest, and how much of the fund should be put into each class of investment? In general, the proper investment of such funds must be confined to mortgages, bonds, and guaranteed stocks.

Let us take a specific case. Suppose a man leave a legacy of $20,000 cash, and a proper home for his widow and children, and a will instructing that the sum be kept invested until the death of his widow, and then converted into cash and distributed. This is an actual case, the legacy having been left in the state of New Jersey. How may it properly be invested? For the sake of clearness, one must suppose that the fund may be held tax-free, for the tax laws vary in each state, and to select a tax-free investment in every case would require a book.

The writer would take the following as a fair distribution of such an estate:

	Amount.	Income
Cash in bank . . .	$1,000	$40
In first-mortgages on farm lands or improved local property .	$10,000	550
In steam railroad bonds legal for New Jersey savings banks	3,000	135
In selected local municipal bonds	3,000	135
In local gas, traction or manufacturing bonds . . .	3,000	150
		$1,010

In every item, careful selection must be made. Buy no farm-land mortgages except from agents whose word you can take as gospel. As a rule, you will find it better to take them in your own county, and only such as have an established reputation for paying interest promptly. In no case should your mortgage exceed 60 per cent. of the market value of the farm on which it is secured. Your savings bank is likely to be your best adviser in making such a choice, though in many states the national and state banks take the lead. They frequently also save you the trouble and expense of collecting the interest and principal when due.

Mortgages on improved property should be bought through mortgage companies, and, if possible, with a title guaranteed by some responsible concern. The title is all important. You cannot afford, in making a small investment of this sort, yourself to search the titles. It is better to take a slightly smaller rate of interest in order to get a guaranteed mortgage from people who are competent to make the search. Do not let your local lawyer induce you to take such mortgages on his say-so. He usually has them to place for clients, and is, no doubt, perfectly honest in his expression of opinion, but his honesty will not save you from trouble if it should happen to be inherent in your mortgage.

Railroad bonds legal for the strictly regulated states may be bought without fear, through any banking house. They have an open market. The only thing to be sure about is that you get them at the prevailing market prices. This you can best do by dealing only with solid bankers in the cities, thereby avoiding the payment of more than the regular commission above the market price as quoted.

Money in the smaller towns finds a good use in local municipal bonds. They do not net much over 4½ per cent., even at the present time, but this return can be secured in most states. Under normal conditions, 4 per cent. to 3½ per cent. is the rule. No one should to-day buy such issues to give less than 4½ per cent. Another important consideration enters here. It is almost impossible to sell small municipal bonds. In making purchases, therefore, one should either pick out short-term bonds, that is, bonds that fall due within five years or so, or else be sure that the bonds have a fair local market, so that the bank can find you a buyer if the estate should be closed up, either by the death of the widow, by the removal of the family to another state, by necessary change of executors, or for any other cause.

The investment of such funds in local gas and public utility bonds is questionable; but the practice is so widespread, and often so profitable, that it would be foolish to take a strong stand against it. Local sentiment enters into the matter to a certain extent. In any such selection, the best judgment should be used. Only the best bonds of the companies should be chosen, and only such as may be readily sold if the occasion should come up. In a vast majority of cases, there are no local bonds that will meet the requirements. In

such cases, one should not go abroad looking for the investment. Do not become a creditor of any company, public utility or manufacturing, with whose business you are not fairly familiar.

Now this outline is theoretically correct, but it is necessary in many cases to depart from such strict rules. A case of this kind came to the attention of the writer last month. A widow was left with about $5,000, a small home, and two boys, ten and twelve years old. She needed $700 a year for the first five years, $500 for the next two years, and did not care whether she had any revenue after that, as her boys would have finished their schooling and be able, and willing, to support her. She had planned to put the money into a national bank and use the principal, which would have carried her through her programme and left her $500 after the boys had finished their education.

I told her this was sheer extravagance and waste. It was an Ohio fund, and Ohio taxes are unavoidable by any legitimate means. It happened that an Ohio city had just made an issue of serial bonds, bearing 4¾ per cent., maturing in equal amounts each year, and that they were offered for sale at about par. She was advised to buy five bonds, maturing January 1, 1909, 1910, 1911, 1912, and 1913. The result of such an investment was sketched for her as follows:

Jan. 1, 1909.	Interest rec'd.	$ 237.50	
	Bond paid off	1,000.00	$1,237.50
	Living expenses		700.00
	Balance		$537.50
Jan. 1, 1910.	Interest rec'd.	$ 190.00	
	Bond paid off	1,000.00	$1,190.00
	Living expenses		700.00
	Balance		$490.00
Jan. 1, 1911.	Interest rec'd.	$ 142.50	
	Bond paid off	1,000.00	$1,142.50
	Living expenses		700.00
	Balance		$442.50
Jan. 1, 1912.	Interest rec'd	$ 95.00	
	Bond paid off	1,000.00	$1,095.00
	Living expenses		700.00
	Balance		$395.00
Jan. 1, 1913.	Interest rec'd.	$ 47.50	
	Bond paid off	1,000.00	$1,047.50
	Living expenses		700.00
	Balance		$347.50

This date cleans up the bonds, and also marks the end of the period during which she requires $700 per annum for living expenses. The income required for the next two years is $500 per annum.

The balances left over each year are to be put into a trust company, or savings bank, (there is no difference in Ohio) to draw interest at 4 per cent., compounded every six months. The total of these deposits, with interest, will be the total of the estate on January 1, 1913. It shows as follows:

Principal	$2,212.50
Compound interest	212.12
Total . . .	$2,414.62
Total if left in national bank and used at rate of $700 per annum	$1,500.00
Saving . . .	$914.62

This is as far as our advice carried her. If she wanted to leave the money in the bank for the next two years and draw against it at $500 per annum, there would be left, at the end of two years, $1,600, against the $500 which she contemplated in her original plan of putting the whole sum in a savings bank and drawing against it.

This instance is cited at some length, not because it is by any means the best possible of its kind, but merely to illustrate. Anyone may do the same thing either in serial municipal bonds, equipment trust notes issued by the railways, or even straight bonds of various classes. The rate of 4¾ per cent. is good for a tax-free investment in Ohio. Diligent search will discover very similar investments in almost every locality east of the Mississippi.

There are two cardinal principles in such investment. One is to secure absolute safety. The other is to make the income, in one form or another, enough to meet the calls upon it. In the case above cited, there was enough money in the bank to pay expenses for six months or even a year, in addition to the estate, so that an investment could be made which did not bring much revenue for a year. As a matter of fact, the bonds will pay $118 of interest on July 1, this year, and that is all the revenue until January 1, next year. If this had not been enough, she might have bought four bonds and kept the rest of the money in trust company at 4 per cent. Investments can always be adapted to meet small exigencies like this.

THE UNREST IN INDIA

THE DISCONTENT OF A RELIGIOUS HIERARCHY THAT YEARNS FOR POWER, AND THE DISAPPOINTED AMBITIONS OF A FEW WOULD-BE OFFICE-HOLDERS EDUCATED BEYOND THE POINT OF USEFULNESS

BY

PERCEVAL LANDON

AMONG the 300 millions of India there are more than a score of nationalities — nationalities divided one from another by sentiment, habits, and prejudices far more deep than any that exist between different European nations at the present day. What is true of one race is necessarily false of some, perhaps of all, of the others.

Putting aside the few and remote tribes whose faith is Buddhism, as having no great bearing upon the present unrest; disregarding even the Gurkhas of the Hills, whose loyalty is beyond doubt; dismissing the Parsis, whose existence in India is entirely dependent upon the continuance of British rule and who would therefore support England with their last rupee — the Parsis are not a fighting race; eliminating the Animists, quasi-aboriginal tribes who have attained to no measure of civilization and are a negligible quantity; and postponing for a moment any reference to the Sikhs, we are left face to face with the two great divisions of India — the Hindus and the Mohammedans.

There are about 220 millions of Hindus and about 60 millions of Mohammedans. Between the two there is eternal antagonism. It is like a three-inch hemp hawser pulling against a seven-eighths-inch steel cable. The equilibrium is fairly well maintained, and it is upon maintaining this equilibrium that British rule in India is based. The balance is easily explained. The Mohammedans, to a man, are a fighting race. The Hindus — omitting the Rajputs, the Sikhs, and a certain number of kindred races — may be said emphatically not to be a fighting people.

THE MASSES OF INDIA SATISFIED

The great mass of the Hindu population of India is entirely ignorant of the present agitation, and, did they know it, they would also be indifferent. Ninety per cent. of the Hindus live, love, and work out their lives contentedly, asking only that their homes and their religious prejudices be not interfered with, and that their sons may have the opportunity of living precisely the same life, dying the same death, and enjoying the same anticipation for their sons in turn. Most of the remaining 10 per cent. — roughly speaking, the town population of India — would live and die as contentedly as their country neighbors were it not for the small leaven of discontented natives who now and then succeed in raising a ferment upon the surface of Indian affairs.

This ruffling of the pool's surface attracts more notice than its importance deserves. The discontent of this small part of one section of the population is caused by circumstances which have their roots deeper than any policy of conciliation or repression could effect, but it would be a mistake to regard it as a development of a national spirit. The expression "a national spirit" is entirely inapplicable to India, for the reason that there is no nation of India.

THE TWO KINDS OF MALCONTENTS

There are two feelings uppermost in the minds of the malcontents to-day. The first is a bitter resentment against the insignificant position of the old religious hierarchy which, before the coming of the English, had for centuries exercised unquestioned sway over nearly the whole sub-continent. The second reason is a personal one. There is no doubt that a much larger class of highly intelligent natives has passed university examinations than can possibly be given any positions for which their education qualifies them.

There are in India four great castes or divisions among those who follow Hinduism. Of these the first is the Brahmin caste. In the old days the Brahmins occupied a place similar, from a religious point of view, to that of the Levites under the Mosaic law, but politically they enjoyed vastly greater importance. Into this caste, entrance can only be obtained by birth. No qualification or money payment of any kind is sufficient to reduce by a hair's-breadth the yawning gulf that exists between the Brahmins and the rest of the world. The domestic occurrences of a native's life — birth, marriage, and death — have all been at their mercy for centuries; and this power over the superstitious natives grew into an iron tyranny from the mountains to the sea — except in those parts of India where a chivalrous and hard-bitten fighting race, like the Rajputs, found in the necessities of their continual warfare standards and traditions which counteracted to some extent the religious supremacy of the Brahmin caste. But the Rajputs never succeeded — and, indeed, never attempted it — in displacing the Brahmins from their position of religious supremacy.

The Brahmin of India is not necessarily either a wealthy or a well-educated man. The mere fact of his unquestioned supremacy of blood has made him invaluable in a thousand different and often ingnominious ways. The "loafer" who dispenses water to thirsty travelers at a railroad station in India probably wears the sacred triple-thread of the Brahmin; otherwise it would be impossible for any Brahmin to accept water from his hands. The exaggerated respect still paid to the Brahmin is shown by the fact that, to this day, in out-of-the-way parts of Southern India, a member of the outcast Pulia tribe must actually leave the road and retreat 120 feet into the jungle whenever he hears the approach of a Nambutiri Brahmin — who, in turn, is looked down upon by his Bengali brethren. The Bengali, as he walks along the road, emits continually a curious buzzing snort for no other purpose than to drive from his path such human vermin as the Pulia, whose low caste sullies around them for many yards the very air of heaven.

In the north, the aristocratic Rajputs never submitted to anything approaching this form of humiliation; and, still farther north, the Brahmins took especial care to hide the smallest of their pretensions from their Mohammedan conquerors. But the respect paid to the Brahmin lies at the root of much of the present trouble. Most, if not all, of the leaders of sedition are Brahmins; and the fact that the Brahmins have for centuries been the only educated class in India has naturally fitted them for the tortuous intrigue which the neglect by the English of their never-abandoned claim of supremacy has rendered necessary in their eyes.

THE DISAPPOINTMENT OF THE BABUS

The second cause of unrest concerns the education of many more *babus* than can afterward be supplied with situations. The word *babu* was originally a title of honor, but it has long lost its dignity. It is now used habitually to denote an educated native who is better qualified to sit at a desk than to carry out work which requires initiative and determination. These *babus* are permitted to delude themselves during their university careers with a passing vision of more dignified and better-paid employment than their fellows can hope for; they are given a course of instruction of which they make the fullest possible use; and then they find that all their ambitions are vain. From the English point of view, their education has been much worse than useless; for, by their over-education, the *babus* have merely been provided with better weapons for the annoyance of those who gave them their education. Denied more legitimate scope, their cleverness turns to the production of seditious societies and journals. Their disappointment is aggravated by the sight of hundreds of Englishmen annually appointed to positions which the *babus* regard themselves as fully qualified to hold.

Yet the preference for the Englishman is inevitable, for the capacity of the *babu* stops with mere intelligence. It is a commonplace in India to-day that, although a *babu* may make a careful and painstaking subordinate, he always proves unqualified for any position which demands strength of character. No native will assume responsibility of any kind. If given executive office, he shelters himself behind his official instructions and is powerless when these fail him. As a magistrate, his own kith and kin mistrust him profoundly. If the work of India is to be done, it must be done by white men. The *babu* has been tried ten thousand times — and ten thousand times he has failed.

This, then, is the position in which the British in India find themselves as regards their Hindu subjects. A very small percentage of fluent and mentally agile men suffer permanently from a subordination which can but remind them of the old and happier days of their supremacy. Their intelligence, whetted by university training, does but inform them the more relentlessly that under the present régime there is little hope for them of anything better. In numbers they are insignificant when compared with the bulk of the population, but "blood is thicker than water." The gospel of insubordination, which is preached so plausibly and fluently by the leaders of the present agitation, has a convincingness to the Hindu mind which cold truth from an alien tongue can never hope to obtain. Besides, the motives of the agitator are not disclosed. The last thing that a seditious Brahmin will admit is that he is actuated by either of the two motives to which I have referred. The agitator appeals instead to a patriotic feeling which never had any existence in the old days, even among the different sections of the Hindus themselves; or he denounces with impassioned oratory the wrongs inflicted by British rule in India.

THE HINDUS' MOHAMMEDAN ENEMIES

What is England's position with respect to the other great body that makes up the bulk of the Indian population — the Mohammedans? The Englishmen and the Mohammedans get on exceedingly well together. Among their educated classes, at least, the debt that India as a whole owes to England is fully admitted. Of course, the fighting Mohammedans would rather see the English out of the country. The Mogul Empire was Mohammedan, and the Mussulmans of the Northwest and of the Deccan know well enough that they could easily again impose their yoke upon the great mass of the Hindu people. The Sikhs and the Rajputs alone would be left. With the rich, populous, and unwarlike parts of India open to them, they would hardly turn aside to fight the keen and chivalrous tribes of the desert.

It is difficult to express the eternal and inevitable hatred and detestation which has always existed between the Mohammedan and the Hindu in India. It is often forgotten by critics that the differences between the Mohammedan's religion and the Englishman's are minute compared with those that divide Islam and Hinduism. They of the East take their religion much more seriously than we of the West; and, in the eyes of Islam, the dog of a Christian is far better than the swine of a Hindu.

The Pathans of the northwestern frontier — keen, hardy, and relentless fighters, without education and without the wish for it — — may stand as a type of the Mohammedans. They are kept from the throat of Hindustan only by the presence of the British Government. If restraint were removed from the Mohammedan, the Hindus would go down like grain before the sickle and the Pathans would turn India into one widespread hell. The first to fly would be our friend the *babu*. Yet he is precisely the man who to-day does all he can to make British rule in India difficult. Were there any chance of his succeeding, agitation would promptly cease. Grim indeed would be the silence of the Bengali press about the moral delinquencies of the white man. The Brahmin agitator knows his Englishman and understands exactly how far he may be trusted to go doggedly on with his ungrateful work.

I once saw a curious instance of the contempt in which the educated Bengali *babu* is held by men of his own blood. Toward the close of 1902, I was traveling up to the Durbar at Delhi and happened to be in the dining-car on the 3-foot Rajputana-Malwa railroad. A well-known Rajput asked if he might join me at dinner. I was delighted, and found him a most interesting companion. From first to last, nothing could exceed his courtesy. But, pausing in the midst of a sentence and apologizing to me, he leaned back in his chair and stretched out his arm behind him, barring the narrow passage-way. A well-to-do Bengali *babu* was stopped by the outstretched arm. The Rajput then called the Bengali ugly things. He told him that he was one of a filthy and seditious lot of cowards, mangy curs that bit the hand that fed them; and he finished by saying that, could he have his own way, he would subject the whole lot of them to a certain torture whose very mention made the wretched *babu* a shade grayer. I never saw such a spectacle of shivering terror. With a final sneer, the Rajput told his victim to go; and then he turned back to the table with a pleasant smile. If an Englishman had used those words to the *babu*, the Viceroy

would have heard of it in three days and there would have been serious trouble.

WHERE RESPONSIBILITY LIES

The recent history of India has been colored by certain strong or unusual personalities, some of which have engendered while others have tried to appease the present unrest. The first of these is Lord Ripon, who preceded Lord Curzon as Viceroy. Imbued with theories founded wholly upon Western principles, totally ignorant of the needs and the prejudices of India, and obstinate with that obstinacy which springs from good intentions alone, Lord Ripon may be said to have done more harm in India than any three of the least efficient Viceroys that ever sat on the throne. The crowning act of his unwisdom was a bill which proposed to allow white men in India to be tried for lesser offenses by native magistrates, without the right of demanding a jury. So determined was the opposition to this that in 1883 Englishmen were ready to bundle the Viceroy into a vessel waiting under steam at Calcutta, had he not yielded. In the same year was organized the National Congress, which has given free scope to native agitation in Bengal.

The next personality materially to affect the situation was that of Lord Curzon. For clarity of vision, for industry so insistent that it left even the proverbially hard-working Indian officials far behind, for breadth of judgment and strength of character, Lord Curzon has never had an equal on the Viceregal throne. From certain remarks that he let fall upon his arrival in India, the *babus* imagined that they could play upon him as a second Ripon, but eventually they learned their mistake. After he had been in office for four years, Lord Kitchener was sent to India as commander-in-chief — and the eternal issue between the civil and the military became personified in two strong-charactered men. With the help of the Secretary of State for India, the commander-in-chief became paramount — and this blow to the civil government of India largely increased the troubles from which it is now suffering. Lord Kitchener is probably the foremost organizer of military campaigns that lives to-day, but his ignorance of the native character has again and again stood in his way. In the opinion of the natives, at least, he succeeded in reducing the authority of the Viceroy to second place. Untrue as it technically was, that which moves men's minds in the bazaar is not so much what has happened as what is believed to have happened. Lord Curzon resigned, Lord Minto took his place, and the civil authority received a serious check. The leaders of the "National Party" were quick to play upon the political ambitions of the natives, which were of course thwarted by the civil power. With the military, the *babus* never came in contact, and were no doubt thankful that they did not. To their delight, at this crowning moment, the Conservative Government in England was replaced by a Radical Ministry, and Mr. John Morley — the man above all others whom they believed to be entirely in sympathy with their aspirations — became head of the India Office. As a matter of fact, they had never made a greater mistake in their lives, but the cry of "India for the Indians" arose then and there.

Prominent among the native leaders is Tilak, who has already served a term of imprisonment for sedition. There is also Naoroji, a fine old fighter with a splendid presence, who has sat in the House of Commons. He was elected president of the Indian Congress in an attempt to clothe the agitation with whatever of respect still clings round a hoary head. Naoroji is a kindly but effete personality, but what he lacks in energy has been abundantly made up by the daring and impudent activity of younger men, such as Banerji, Lajpat Rai, Chandra Pal, and Ajit Singh. So confident were the agitators that their time had come, that Banerji was crowned in Calcutta by his friends as King of Bengal. For three days India shook with merriment. Then Banerji's name as a serious factor in the "National" movement ceased to exist. More recently, Lajpat Rai has attracted attention by raising the standard of revolt in Lahore, one of the chief towns of the Sikhs.

CENTRES AND METHODS OF AGITATION

There are two chief centres of disaffection — Calcutta and Poona — on the west coast. Within the last two years, since the partition of Bengal into two provinces, disaffection has also been sown over a large part of both. But Lahore, the home of the Sikhs, is outside of the area of Brahmin influence. The very language changes there from Hindustani to Punjabi. The Sikhs are fighters first and theologians afterward; they are abhorrent

to the Brahmins, for they have abolished caste and swept away the whole hideous pantheon of Hindu divinities. The Sikhs have twice waged war on the British on almost equal terms, but after peace had been made they accepted their new obligations and coöperated in the suppression of the Mutiny of 1857. Since that date they have provided the backbone of the Indian army. Lajpat Rai was, therefore, a bold man in making Lahore the seat of his campaign.

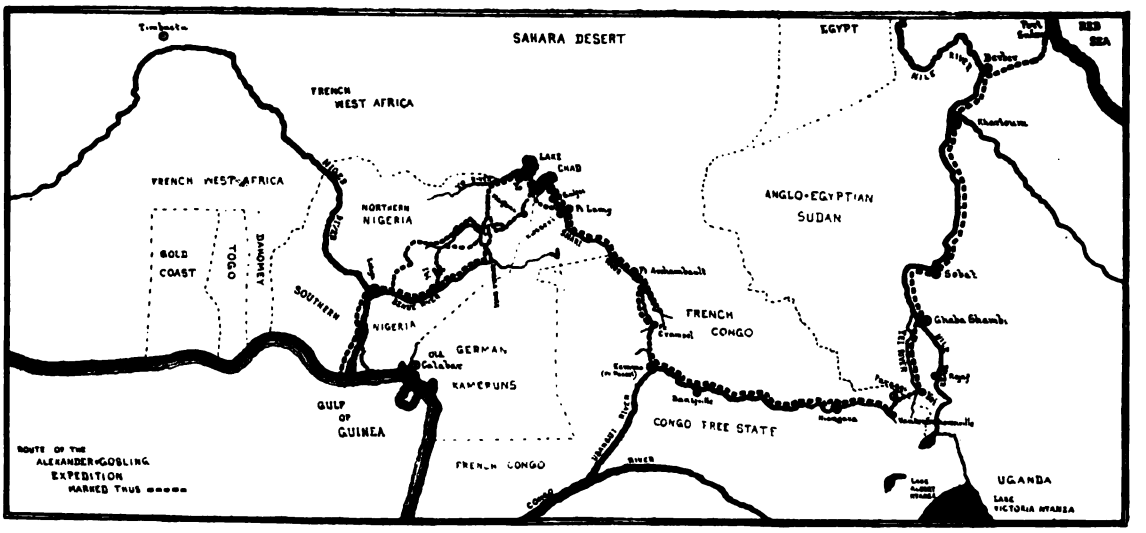
He was encouraged in this act of indiscretion by an incident of tremendous importance. After the partition of Bengal, it was found that sedition was being systematically taught in some of the native schools, and the Governor of Eastern Bengal took immediate steps to stop it. His activity incurred the displeasure of the Indian Government and he was superseded. The agitators redoubled their efforts, but Mr. John Morley, the Secretary for India, dealt with the situation in a vigorous manner. Without warning, Lajpat Rai was swept off by a motor-car in the middle of a seditious harangue, and India knew him no more. The flowing tide of disaffection ebbed in a moment. The consternation of the agitators was increased by a rumor that Ajit Singh, editor of a native newspaper and the tool of Lajpat Rai, had been whirled away into obscurity by the same mysterious process. Six others were sentenced to eighteen months' imprisonment and the editors of two seditious newspapers received sentences of five years each. This punishment produced the desired effect, and the exiled leaders have since been returned to their homes.

PASSIVE RESISTANCE IN INDIA

With no likelihood of a mutiny among the troops and with a term of imprisonment staring them in the face, the agitators have had resort to their last card — a boycott of British goods. This method of resistance is foredoomed to failure, for it is profoundly true that a native who has been in the habit of paying 32 cents for a piece of English cloth will not pay $\frac{1}{8}$ of a cent more for the pleasure of supporting any movement on earth. Besides, he knows that if the cloth is of native manufacture it is also of inferior quality. This applies to every article sold in India, which for many reasons must always remain a free-trade country. Moreover, it was shown in an attempt by the Bengali delegates to have the National Congress endorse the boycott that no one in India outside of Bengal wanted it. Furthermore, the leaders of the agitation can expect no support from the two leading native princes of Bengal — the Maharajahs of Darbhanga and of Benares. Of the loyalty, absolute and complete, of the Maharajah of Benares there can be no question. The Maharajah of Darbhanga has recently given out a public statement in which he expresses a belief that, without the support of the English, the native states would revert to their old condition of chaos and warfare.

The policy of consideration and liberality which has been consistently adopted by the British Government in India has been taken advantage of in a way that might have been expected by those who know the workings of the Oriental mind. So soon as it was found that native methods of enforcing respect for a superior were not smiled upon by the Government, when used by Europeans, the natives began to act with increasing insolence toward isolated Englishmen. It is no longer discreet for an Englishwoman to go about by herself. Seditious literature has been poured forth in floods, and actual uprisings have occurred at a few centres. But not more than one in a hundred of India's millions either knows or cares anything about the movement. The only serious grumbling among the fighting Mohammedans comes from the swarthy, hook-nosed Pathans, who are prevented by the English from restoring law and order on their own account. They have once again seen the Indian Government postpone that battle of Armageddon which, in his heart of hearts, every Hindu fears — and which, in his heart of hearts, every Pathan knows must come some day.

Meanwhile, the work of India goes steadily on. Notwithstanding the Western sense of justice and fairness with which the English are ruling this country of diverse nationalities, they are finding — exactly as the Americans have found in the Philippines — that it is through their very virtues that they are struck at. In their heart of hearts, the natives think the white men fools for not adopting the more ancient and roughshod methods of enforcing respect in a country that is as old as time — and, in this matter, it will never grow a year younger. But the English plod along and bear the White Man's Burden with a grin.



ACROSS CENTRAL AFRICA BY BOAT

THE ALEXANDER-GOSLING EXPEDITION THROUGH THE HEART OF THE SUDAN, FROM THE NIGER TO THE NILE, NAVIGATING SIXTEEN LARGE RIVERS

BY

EDGAR ALLEN FORBES

(COMPILED FROM LIEUTENANT BOYD ALEXANDER'S DETAILED ACCOUNT OF THE EXPEDITION, RECENTLY PUBLISHED PHOTOGRAPHS BY COURTESY OF MESSRS. LONGMANS, GREEN & CO., N. Y.)

CROSSING the Dark Continent by boat is something new in the line of African travel. An expedition conducted by three young officers of the British army, with Lake Chad as its objective point, entered Africa at the Gulf of Guinea in 1904 and emerged at the Red Sea in 1907, after a journey of more than 6,000 miles, chiefly by water. The purposes of the expedition are shown in its geographical and scientific achievements.

(1) Northern Nigeria (which is British territory) was explored and scientifically mapped after eight months' difficult work.

(2) Lake Chad was found to be only half as large as represented, and less than three feet deep on an average. Moreover, it proved to be two lakes, separated by a barrier of reeds fifteen miles wide.

(3) Three large unexplored rivers were navigated and mapped — the Baumingi, the Kibali, and the Yei — rivers which may some day be of as much importance as the Ohio, the Missouri, and the Columbia are now.

(4) The connecting link between the fauna of the Niger and of the Nile was supplied. Fifteen new species of birds and twenty mammals unknown to science were discovered. As a further contribution to science, 2,500 bird-skins (including 800 from the Chad basin and many others that are rare), a large collection of fishes, and the skins of many mammals were brought back. Among them was the skin of an okapi (said to be the rarest animal in the world), perhaps the first ever killed by a European. Its existence was previously known chiefly by report and from fragments of hide secured from natives. The okapi shares with the giraffe the honor of being sole survivors of a once extensive group that lived in a prehistoric period. Two collections of Lake Chad birds, secured in 1822-24, were already in Europe, but they were very incomplete. The collection of fishes made by Captain Gosling, one of the three officers, is the first from Lake Chad and it establishes the fact that they are identical with those of both the Niger and the Nile

basins, pointing to some previous marine connection. Many of the same fishes are pictured in the hieroglyphics of Egypt.

THE PERSONNEL OF THE EXPEDITION

Each of the four white men connected with this party was especially fitted for his task. Three of them were young officers of the type that makes the world go round — strong, seasoned, resolute, resourceful, fearless of man or beast. The leader — Lieutenant Boyd Alexander — had gone through five previous expeditions and knew exactly what to expect; moreover, he had learned from caravans in the markets of the Gold Coast hinterland what kinds of goods passed as the gold standard in the Chad districts. He was also a naturalist and a specialist in bird-lore.

His brother — Captain Claud Alexander, of the Scots Guards — had seen active service in the Boer War, in which he was wounded while performing an act of gallantry that caused Lord Methuen to mention him in his dispatches. He had an aptitude for surveying, held a diploma from the Royal Geographical Society, and became the map-maker of the expedition. He could map a region from the saddle, without stopping his horse, and do it with such neatness and accuracy that the map rarely needed retouching.

Captain R. B. Gosling, an accomplished athlete, was noted on the cricket, football, and polo grounds of England and India. He saw active army service first in the Punjab Hills — where he was one of only a few officers not incapacitated by fever — and later in South Africa. His company formed part of the "13th M. I.", celebrated in one of Mr. Kipling's poems. He also had experience as a hunter of big game, but his instincts were those of the scientist. He never slaughtered ruthlessly, and he took exact measurements of every animal killed.

Mr. Talbot, who assisted with the survey work in Northern Nigeria had previously shown his efficiency while serving with the Liberian Boundary Commission.

An important factor in the success of the exploration was José Lopez, who had been Lieutenant Alexander's body-servant throughout all his former expeditions. He had seen active service in Ashanti, knew the principal dialect of Nigeria, and was a good shot and an expert bird-skinner. To his loyalty and judgment on several occasions, members of the expedition owed their lives. Once, after having gone two nights and a day without sleep, he rode fifty miles through the African bush, without stopping, to bring a doctor.

Of these five who went in at the Niger, only Lieutenant Boyd Alexander and José came out at the Nile. Captain Claud Alexander succumbed to "blackwater" fever near Lake Chad at the end of the first year, and Captain Gosling died of the same malady two years later at a post in the Belgian Congo, on the highway to home. His death was due to prolonged exposure in the effort to secure an okapi. Mr. Talbot returned to England after Lake Chad had been reached.

The rank-and-file was made up of carriers (secured by José at the West Coast), of which 200 were required at first. Their record speaks well for the West African Negro. Two of these "boys," when paid off at the Lake, were entrusted with boxes of rare bird-skins to be carried 500 miles to Lokoja, and they delivered them in good condition. Five others heard after they had left the Lake for home that the expedition could not move camp for lack of carriers, and they tramped all the way back to help.

The "flag-ships" of the expedition were two steel boats, costing about $1,000 each. They were 26 feet long, 4½ feet deep, with 6-foot beam, and were fitted with lug sails. These boats were made in sections and required 48 men to carry them when navigation became impossible. Survey instruments, cameras, rifles, tents, a large grocery and a small department store made up the outfit. A gramophone lightened many a wearisome night and a phonograph invested its possessors with supernatural powers. The king of Nassarawa, for example, was asked to pronounce a royal message to his neighbor, the king of Dorroro. When the salutation was reproduced a few days later at Dorroro, the king recognized the voice and began to look for his friend. But when he learned that the white man had merely imprisoned the voice of the other chief, his face became ashen with fear.

THE VOYAGE UP THE NIGER

Landing at the mouth of the Niger in March, 1904, the expedition was carried in five days by a Government stern-wheeler to Lokoja, at the junction of the Niger and the Benue. The

air-line distance is about 250 miles. The lower part of the Niger varies in width from 800 yards to two miles; back of the river is an open bush country, where low-grade natives live by farming and fishing. The bird-life gave the passengers their chief diversion. Pelicans and sleepy-looking ibis were plentiful, with here and there a startled flock of white egrets settling on a distant tree and looking like clusters of white blossoms. As the boat passed in the early morning under the branches of wide-spreading trees, it awoke thousands of giant bats, which sleep hanging to the limbs; their furry bodies flashed in the sunlight like gold as they darted for the shadows of another tree.

At Lokoja the boat-sections were put together and polers secured for the voyage up the Benue to Ibi, about 200 miles. The Benue has an average width of about 1,000 yards and is navigable all the way, but the boats had to be poled against a current running four miles an hour. It was a monotonous journey through an uninteresting country. There was no game along the banks, but the dead trees were alive with brilliant bluejays and the mud-banks were honeycombed with the nests of scarlet bee-eaters. As the boat passed, these banks "bristled with pointed bills and went off like a battery of guns, shooting out their live charges with red shrieks into the air." Occasionally a native canoe — thirty feet long, made from a single tree, laden with passengers, cattle, and produce — passed on its way to the market at Lokoja. Near Ibi the British officers of the Anglo-German Boundary Commission were met and a friendly luncheon on a sand-bank was the result.

THE SURVEY OF NORTHERN NIGERIA

Ibi, which was reached about the middle of April, is the central market of the Benue region and the capital of a province. It was once an important outpost of the Niger Company, but is now a fever-stricken town of about 6,000 and is a hotbed of vice. Here the party split up, to unite again in the vicinity of Lake Chad. Captain Alexander and Mr. Talbot began their survey work in the direction of the Murchison Range and covered Northern Nigeria as far as Lake Chad. Captain Gosling went hunting for big game. Lieutenant Alexander was stricken with fever and returned to Lokoja to recuperate, after which he made a wide detour among the Fulani villages and thence to the lake. José became the admiral of the "fleet" (two boats and four canoes), which followed the river. In this way a large section of unknown country was covered.

The survey work was attended with difficulties of many kinds. Fever and dysentery sapped the white men's strength; a carrier broke one of the essential instruments; natives frequently stole the signal-flags for the sake of the little pieces of colored cloth; poisoned arrows were shot from the bush, and once a pitched battle became necessary. The mosquitoes were so plentiful that they sometimes obscured the instruments when observations were being taken at night. The region traversed varied all the way from a forest thickly tenanted with enormous baboons to a walled town surrounded by fields of ripening millet and guinea-corn. Here the king's two wives were seen perched in trees to scare away the birds, while the monarch was sunning his majesty on a huge rock outside the palace gate.

The "fleet" had meanwhile proceeded up the Benue to the mouth of the Gongola and ascended that river for eighteen days through a famine-stricken region to Ashaka, a town of cripples, flies, and dogs. Here José was joined by Captain Gosling and the boats were carried overland to the Yo, a beautiful little river that winds its way through the thirsty plains of Northern Nigeria to Lake Chad. It skirts the Great Desert and the only green thing is the fringe along its banks. From April to August it is dry. It has the distinction, however, of being the boundary between British and French territory and may, therefore, appear in history later. The boats were reëmbarked at Gaidam, on the edge of the Sahara, and proceeded without incident to the lake.

By this time the surveying party had advanced to Maifoni, 125 miles southwest of the lake. Once a town of 10,000, it is now a village of mud-huts surmounted by a fort flying the British flag, commanded by a lieutenant and a company of the West African Frontier Force. Its greatness has passed on a few miles to Maidugari, which is the largest market among the important Bornu peoples.

Here at Maifoni, summoned by special messengers, all the members of the expedition were together for the last time, after a separation of five months, for here it was that Claud Alexander died. There were tales of "the Service" in his little room in the sun-baked

THE LATE CAPTAIN R. B. GOSLING

LIEUTENANT BOYD ALEXANDER

MR. TALBOT AND ONE OF THE EXPEDITION'S PETS

BRITISH ARMY OFFICERS IN NORTHERN NIGERIA
(Lieutenant Alexander and Captain Gosling standing)

CAPTAIN ALEXANDER'S GRAVE AT MAIFONI

THE LATE CAPTAIN CLAUD ALEXANDER

THE PERSONNEL OF THE ALEXANDER-GOSLING EXPEDITION

THE CAMP OF THE BRITISH MEMBERS OF THE ANGLO-GERMAN BOUNDARY COMMISSION ON THE BENUE RIVER

This Commission settled vexed questions of boundary between the two Nigerias and the German Colony of Kamerun, which adjoins them on the southeast

READY FOR AN OVERLAND TREK

KANEMBU SHEPHERDS

A KERRI-KERRI TOWN IN NORTHERN NIGERIA

The conical structures are huts; the taller ones, resembling haystacks, are granaries

THE NAVIGATION OF LAKE CHAD

The boats were often dragged through the mud for miles, while "outrunners" waded in advance in search of water deep enough to float the boats

THE FINAL PASSAGE OF THE LAKE

Along a narrow, winding waterway at the southern end. It was necessary to cut away the overlapping reeds

THE LAUNCH OF THE EXPEDITION ON THE BENUE RIVER IN 1904

THE EASTERN SHORE OF LAKE CHAD

THE FIRST BRITISH BOATS ON LAKE CHAD

THE LAST LAP — 1907

Lieutenant Alexander approaching the Upper Nile

fort by day and a "concert" on the graphophone at night. Then would come a native musician, with his sweet-toned alligata pipe, to march up and down outside the window — because it sounded to the sinking officer like the bagpipes of the Scots Guards. When the end came he was buried with military honors and his brother covered the grave with purple thistles, found by chance. Then little children from the Freed Slaves' Home went to the river with their calabashes and brought mud with which to make a wall about the grave, and the commandant of the fort made a cross from the tin lining of ammunition-boxes. Then the others picked up the survey where it had been dropped and carried it on to the lake.

EXPLORING LAKE CHAD

Three months were spent in the exploration of the lake, which was accomplished by Lieutenant Alexander and José. Mr. Talbot, after spending Christmas with his companions, returned to England by way of Lokoja; Captain Gosling occupied the time in making his collection of fishes and mammals.

The explorers found that their conception of Lake Chad as a blue inland sea, with high banks covered with vegetation and crowned with waving palms, was as unreal as the mirage that sometimes lured them on. This is Lieutenant Alexander's description of the lake as it is: "Imagine a large pool in a grass-grown plain, lying shallow like water in the palm of an outstretched hand, formed by rivulets of rain coming to rest in the gentle depression of an otherwise flat surface — and you have a miniature Lake Chad." Before an attempt was made to cross it, it seemed to stretch away "in a broad sheet to the south, beneath a sky of tender green, while behind us the sun set with a glorious flare of crimson." But the illusion was soon dispelled.

Loneliness is the spirit that haunts it and the timid fishermen disappear so mysteriously that many tribes firmly believe them to be mermen. The western shore is a wide, barren plain; but when the wind blows from the east it brings the water upon it for several hundred yards — more silently than the flow of the tide. The water recedes so suddenly that great fish are left stranded. The northern shore is barren, but a prosperous region stretches away to the east and south. The width of the lake opposite the mouth of the Yo was formerly marked on the maps as sixty miles, but Alexander found it to be only thirty. The southern basin, marked ninety miles, proved to be only forty-five.

The first voyage on the lake was an attempt to reach the eastern shore straight across from Kaddai. Five days' rations were taken, but it was three weeks before the half-starved party returned. They had taken a plumb-line to sound the water's depth, but found it necessary to get out of the boat frequently and drag it along through the mud. When the superstitious boatmen were required to wade out

THE NEW MAP OF LAKE CHAD
The dotted outline shows the original water-line

in the slimy, black mud for half a mile in the search for water deep enough to float the boat, they expected the mermen to drag them down into the depths. After a vain effort to find a passage to the south, the crew returned.

A second voyage was made opposite the mouth of the Yo. The eastern shore and the northern part of the upper lake were explored and an effort made to cut through the barrier to the south, but this proved futile. It was then determined to move the camp southward to Kukawa and make the third voyage from that point. On this second trip, they had the unusual opportunity of seeing a herd of sixty hippopotami.

This being the limit of British territory, the escort of soldiers had been sent back and the carriers paid off. All efforts to get substitutes failed and it required six weeks to move

twenty-seven miles. The passage of the lake was successfully made in this attempt, but it was necessary to cut through stretches of marsh and reeds that lay between the spaces of open water. At night they were attacked by three species of mosquitoes, one as large as a house-fly. Sleep was impossible; the boatmen sat through the night in water up to their necks and the pet dog howled with pain. Strange to say, no fever resulted from these attacks. When the boat at last reached the mouth of the Shari and the native captain saw solid ground instead of mud, he sprang ashore in his joy and ate a mouthful of the earth.

IN THE CONGO COUNTRY

It was the end of May when the "fleet" entered the Shari and headed for the French Congo. The Shari is another international line, 400 yards wide, and so stocked with fish that the natives float down the stream on logs and scoop them up with hand-nets. The joyful fact that this was the white man's country was revealed by a wretched outpost flying the tricolor of France; the flag was lowered three times in salute as they passed. The first important village was the walled town of Gulfei, which is also a great market. Blasts of trumpets and the roll of drums greeted the "fleet," and the entire population was assembled on a sand-bank, scarcely a man being under six feet in height. The sultan, in gorgeous costume and with a tall turban surmounting his six and a half feet, was surrounded with all the majesty that can hedge about a native chief. Lieutenant Alexander was lifted into the saddle of a richly caparisoned white horse and escorted by the sultan through the town. Pandemonium was the order of the day and nothing was too good for the white man.

A little more than a hundred miles from the lake, Fort Lamy was reached, a straggling town surmounted by the château of the French commandant. This is also a "commercial centre," for the rich caravans from Tripoli pass this way on their journey to the Wadai country. Here the governor of the *Territoire du Chad* entertained the expedition at dinner with all the courtesy of his race. Across the river from Fort Lamy is the German post of Kusseri, at which a call was made as a matter of international diplomacy. With the aid of two dictionaries, Captain Stieber, the commandant, also gave a dinner.

Not another important town was seen for three or four hundred miles. The magnificent river flowed through a silent land where for days not a canoe was to be seen. At one point Captain Gosling watched a herd of hippopotami at play and then walked suddenly upon a troop of eight lions. After leaving Fort Archambault, where a French captain and a company of Senegalese were met, the expedition halted for a "side-trip" up the Bamingi, a tributary of the Shari. The natives along this stream were so wild that every effort to get within speaking-distance failed. Finally, somebody thought of the looking-glasses in stock. When the sunlight was flashed from these upon a group of men, they shrank in terror. Then arose a hero among them; stepping forward, he looked it full in the face and caught a sight of himself. A wondering smile came over his ugly features and then he went into a paroxysm of laughter. Both parties were soon good friends. Returning to the Shari, the voyage continued up its other main branch, the Gribingi, as far as the French post of Fort Crampel. From this point it was necessary to transport the boats over the watershed of the Ubangui and reach that river at Kemmo.

THE HIGHWAY TO HOME

It was a day of rejoicing when the Ubangui River came into view, for the route would henceforth be eastward in the direction of home. The Ubangui is the chief tributary of the Congo and is 1,200 yards wide at this point. Here, in the heart of the great continent, they came upon a Catholic mission in charge of four priests, who conduct a school that will some day be referred to as the beginning of industrial training of an important region.

Just east of Banzyville, where they caught their first sight of the Congo flag — a golden star on a blue ground — the expedition spent its second Christmas in Africa. Captain Gosling killed a waterbuck for the occasion and a native chief sent calabashes of wine for the "boys," who were also given presents from the stores. After the feast, the leader of the "boys" requested permission to present a drama of their own composing, entitled: "The White Men." The characters of the play included all the leaders of the expedition and an elephant, a lion, and a little bird — all impersonated by the boatmen. The main plot was that Captain Gosling, a mighty

hunter, pursued the largest elephant in the forest, and got it — while Lieutenant Alexander stalked the smallest bird, and got it. The mimicry of the players and their caricature of the leaders made this "first-night" performance more than a clever jest.

THE GLOOM OF THE CONGO FOREST

A month later the onward course was halted for an okapi hunt. A day's journey from the river brought the party into the depths of the great forest, where the sunlight was swallowed up in gloom. The oppressiveness of the Congo forest is so overwhelming that the natives keep close together in passing along the dark trail, and birds that fight each other in the sunlight struggle through the undergrowth with all their natural enmities subdued by the haunting fear of the perpetual twilight. This is what the African forest looks like by day:

"The long coils of the creepers hang down from the trees dripping like dreadful watersnakes, and the ash-white rubber saplings look like pale spectres in the gloom of the great trees. Then the darkness, that at first seemed so peaceful and hushed, grows terrible — like a live thing struggling in the meshes of the trees, captive from some night that passed through the forest long ago. And the traveler hastens on with eyes thirsting for the light that lies ahead like a precious desert-pool where the trees at length give way. Here chattering weaver-birds, in bright plumage of scarlet and black, and tiny sun-birds of beautiful lustre hues, hovering round a blossom tree in the sunlight, pass wonderful as a dream — and in a few steps one is swallowed up again in the night of the trees."

It is at night that the forest becomes really alive, for all the animals except the antelopes and the wild pigs are nocturnal in habits. Even the branches of the trees become sounding posts vibrating with the noises of innumerable forms of life. If the white man fall asleep, he is perhaps awakened by the sound of rain-drops pattering on the roof of his hut, only to find that it is the noise of myriads of white ants crawling over the dry leaves.

It was in this forest region that the okapi was at last found. Captain Gosling had been hunting for weeks and returned empty-handed. Just then a "boy" came into camp with a load of meat and a note from José, saying that he had killed an okapi and this was its meat. He had followed it for three days and found that it traveled in a circle and invariably passed between two certain trees; it was then trapped in a pit between the trees. While John, the cook, prepared the first okapi cutlets that a white man is known to have tasted, the skin was brought to camp. There were no depressed spirits that night.

The voyage up the Ubangui (known as the Welle higher up) was continued until Captain Gosling came down with "blackwater" fever. He withstood the immediate attack, but it reappeared three months later at the Belgian post of Niangara. Fortunately, a medical officer was stationed there, but the strong hunter's system had been undermined. After two and a half years of vigorous work, he died within easy reach of the homeland. In him the British army unquestionably lost a valuable young officer.

Lieutenant Alexander, after burying the last of his comrades with military honors near the graves of twelve other white men, continued the route toward the Nile. On June 25th he was at Dungu, where he found a Norwegian commandant with 400 men. A few days later he began the exploration of the Kibali River, which had never before been navigated. The attempt was beset with peril, but it was successfully finished, in spite of the fact that his boats were now full of holes.

MAKING THE LAST LAP

A two-days' trek across the watershed brought the expedition to Yei, on the river of that name. Yei is a Belgian post within five days of Redjaf, on the Nile, but Lieutenant Alexander decided to navigate the Yei, if possible. By way of precaution, the maps and collections were sent overland to Redjaf and thence to Gondokoro, and the last exploration began on October 15th. Two boatmen were lost in the descent. Nobody knew exactly where the river would lead, but they came at last in sight of two pieces of bunting, faded and torn, but it was a glad sight for British eyes. An old chief, leaning on the arm of his head-man, was preceded by a man carrying the Union Jack and the flag of Egypt — it was the Anglo-Egyptian Sudan at last! On December 13th a long march brought the party to the village of Gaba Shambi. As he neared the town, Lieutenant Alexander observed with languid interest the approach of a string of donkeys — then a smart-looking Englishman! Forgetting that he wore a ragged shirt, running trousers, and sandals made from a

waterbuck's hide, the explorer rushed forward to grasp his hand, but the Englishman stared at him in amazement. A few words of explanation set everything right, and the Englishman, Major Buckworth, told him to help himself out of the stores at the station. The next morning, with a loud shout from the "boys," they came in sight of the Nile — the end of all their troubles. The collections were brought up from Gondokoro and all embarked on the steamer for Khartoum. Here the fifteen remaining "boys" were paid off and started on their pilgrimage to Mecca, while Lieutenant Alexander and José took train for Port Sudan, to begin their own pilgrimage to the white cliffs of Dover.

CROSSING THE GREAT DIVIDE BY ELECTRICITY

THE PLANS OF THE CHICAGO, MILWAUKEE AND ST. PAUL, THE NORTHERN PACIFIC, AND THE HARRIMAN LINES FOR THE ELECTRIFICATION OF THEIR MOUNTAIN DIVISIONS

BY

F. G. MOORHEAD

WITHIN two years, freight and passenger trains will be lifted over the Bitter Root Mountains on the backbone of the continent and dropped into the inland empire of the Northwest by electric power. The Chicago, Milwaukee and St. Paul Railroad is harnessing the "swiftwaters" of the St. Joe River for the electrification of the Idaho and Eastern Washington division of its new transcontinental line. In the "swiftwaters" of the St. Joe, a comparatively little known river of northern Idaho, flows enough power to drive 500 Mogul engines with 160 miles of train, which is more than the St. Paul system now operates on all its lines.

The surveying of the proposed dams has been completed and work on the first of them at the head of Mica Creek was begun last September. This structure will be between 800 and 900 feet long and about 40 feet high. Other dams will be built every few miles along the "swiftwaters" between the mouth of Mica Creek and Black Joe. They will be so close together that they will back water from one to the other, making practically a long, lock-divided lake. The dam at Little Falls will be eighty-six feet high and will back water for twelve miles up the river; but the others will be lower, for in most places the railroad track will be only forty or fifty feet above the river. Theoretically, 200,000 horse-power can be developed on this one river-reach of thirty-five miles. The cost of development is placed by the railroad officials at about $45 per horse-power. Approximately $9,000,000 will be expended, but part of this is for the land which the artificial lake will submerge. One ranch was recently sold to the company at $125 an acre.

In addition to driving the heavy transcontinental trains across the Bitter Roots, the electric power will be used for developing the latent possibilities of this section. The land adjacent to the new line abounds with timber. Heretofore it has been necessary to float the logs down the St. Joe River to Lake Cœur d'Alêne, but from now on the sawmills will go to the heart of the forest.

The St. Joe is primitive country, given over to Indians and to Nature, untouched by railroad track. Last summer, however, work was begun on a large sawmill at the town of St. Joe, and the summer of 1908 is to see a $1,500,000 wood-pulp papermill at the same place. St. Maries, thirty miles farther down the river, is also to have a sawmill and a number of other industries which will derive their power from the harnessed "swiftwaters." One company, subsidiary to the railroad company, has recently acquired 28,000 acres adjacent to the river and the new line of railroad. Some of this timber land will yield as much as 10,000,000 cubic feet to the quarter-section.

Tributary to the St. Joe, St. Maries, and Cœur d'Alêne rivers, and to Lake Cœur d'Alêne, it is estimated that there are 25,000,000,000 cubic feet of standing timber, or enough to keep all of the sawmills of the half-dozen sawmill towns in operation for 150 years, during which time, if the timber is properly cut, nearly three full-grown crops will have matured. Superfluous power may be transmitted to the immense lead mines of the Cœur d'Alêne district, now dependent on Spokane, almost one hundred miles to the west.

Other transcontinental lines are preparing to save hauling coal for their engines to burn while going over the mountains. The Great Northern has ordered four 100-ton electric locomotives to be used in handling its trains through the Cascade Tunnel. They will be delivered in the spring of 1908, when it is hoped the great power-dam in the Cascades will be finished. These new three-phase locomotives are the first of their type to be used for railroad service in this country, and they are larger and more powerful than any in Europe. Each locomotive will be equipped with four motors rated at 325 horse-power, which will make them able to haul a 1,000 ton train (or about 100 loaded cars) at a speed of fifteen miles an hour up a 2 per cent. grade. The motors will be used for "braking" on a down-grade as well as for hauling when going up. Going down they will be used as generators, assisting the air-brakes in holding the train and making additional current for the line. That Mr. Harriman has long planned a similar move is well known. Already the Southern Pacific is electrifying its suburban roads around San Francisco. The great problem of the Union Pacific — the thirty miles of heavy grade over the Sierra Nevada Mountains — may be solved by electrification, for the electric locomotives have less difficulty with heavy grades than steam locomotives have.

Early in October, a press dispatch from Eugene, Ore., said:

"S. W. Curtis, of San Francisco, who during the past two years has made numerous filings on water-power sites on several different streams in western Oregon, including the McKenzie, the Willamette, and the Santiam rivers, has filed with the clerk of Lane County a notice of appropriation of 12,000 inches of the waters of Odell Lake in the eastern end of Lane County. He has located a canal to extend several miles west and flow into Salt Creek. It is thought Curtis is working for the Southern Pacific Company, which has had several crews in that vicinity during the past year ascertaining the amount of power to be developed from the different streams, with a view probably to utilizing it some day in the operation of trains over the mountains when the proposed line into eastern Oregon is built."

That there is water-power in plenty for all comers is conceded. Engineering experts have placed the aggregate for the state of Washington alone at 3,000,000 horse-power, distributed as follows:

Rivers	Horse-power
Spokane	400,000
Columbia	400,000
Chelan	300,000
Pend d'Oreille	200,000
Kettle	200,000
Yakima	200,000
Snake	200,000
Okonogan	150.000
Palouse	150,000
Wenatchee	150,000
Chiwaukum	100,000
Snoqualmie	100,000
Puyallup	75,000
Entiat	75,000
Cedar	75,000
Nesqually	25,000
Nooksack	25,000
Skagit	25,000
Des Chutes	20,000
Other streams	75,000

Approximately 10 per cent. of this has been developed. In Spokane and vicinity alone, over three hundred miles of electric railroad are operated by converted water-power, while the coast cities utilize large amounts. But the projects which are planned, or those actually under construction, have a much wider sweep than any in existence now.

With the power of Chelan Falls, it is proposed to run an electric railway from Spokane to Puget Sound and another from Wenatchee, the famous fruit country, north to the international boundary. Among many other projects is that of the Big Bend Water-Power Company. Sixteen thousand horse-power will be developed at one site, but the company has gained control of the upper falls, where 16,000 to 20,000 horse-power additional can be developed at a comparatively small outlay. The power will be used on a line to be built between Spokane and Wallace, Ida., and some of it may be used by the Oregon Railway

and Navigation Company, which is said to be planning the electrification of its line in Washington and Idaho.

Of the various power rivers in the state of Washington, the Spokane River is perhaps the most remarkable. Experts say that there is probably not another stream in the United States so accessible for the development of energy. From its source in Lake Cœur d'Alêne, thirty-four miles east of Spokane, it has a fall of 1,224 feet to its mouth, at the confluence with the Columbia River. The altitude at its source is 2,124 feet; on its way to Spokane it has a fall of 369 feet, and in passing through the heart of the manufacturing district the fall is 132 feet in 440 yards.

On the west side of the Cascade Mountains there are such falls as the Snoqualmie, 268 feet in height and of large volume. Part of this energy has been appropriated in furnishing power to cities on Puget Sound. Cedar River, and the Nooksack, Skagit, Stillaguamish, Skynomish, Snoqualmie, and numerous other falls on the streams flowing from the Olympic and Chelan Mountains, and the Tumwater and Chelan Falls, with others of smaller volume, furnish almost unlimited power.

The development that has already taken place marks the beginning of an era in which the use of water-power will help to save the diminishing coal fields, and if the electrification of the railroads becomes general, to turn over many thousands of cars that are now carrying coal for the railroads' use to the other uses of commerce.

GARI MELCHERS

A GREAT AMERICAN PAINTER WHO HAS RECEIVED MORE RECOGNITION ABROAD THAN AT HOME

BY

C. LEWIS HIND

THE Englishman wandering over America, if he happens to be interested in the arts, meets delightful surprises and unexpected interests, ranging from the splendor of the modern architecture to the lyricism of the modern landscape.

In Buffalo I found a loan-collection of Impressionist pictures more catholic than any exhibition I have seen in Paris or in London. In Detroit I paused a morning to enjoy, at the house of an enlightened collector, the most complete ingathering of Whistler's works in the world. In Washington there is an unforgettable statue by Saint-Gaudens more impressive than any modern bronze in Europe.

These are a few of the surprises. Let them pass for the moment. The subject of this paper is Gari Melchers, American painter-craftsman, and I am writing it because for years I have known the pictures and the man well enough to be convinced that the man and his achievement are indissolubly one. He lives to paint: he would rather paint than do anything else; life to him would be barren and tedious without his craft. Most other painters have ulterior interests and relaxations — his relaxation is to turn from painting the figure to painting landscape. When, not long ago, he rented a room on the waterfront, to study the North River, that was his holiday, his Newport or Atlantic City.

George Moore once remarked to me, "How should I fill the day if I didn't write books? I don't want to read. I loathe exercise. I can't see my friends until the evening, so I pass the time writing books. It bores me less than anything else." Painting fills Gari Melchers's time; but it does not bore him, any more than it really bores George Moore to write books. For we all groan or skip, according to mood or health, along the line of least resistance — whether it be painting, shooting big game, composing sonnets, or trimming hats. I suspect that, outside of painting, most diversions bore Gari Melchers. He is a worker. Work begets work. The zest increases the more we concentrate, if worry does not intervene. Mr. Melchers loves long spells of solitary labor — months of it — and resents the inroads of other folks' allurements. Yet he

is a buoyant host and a good comrade: a fierce talker too, at times, and domineering when interested or indignant. But he, like other craftsmen who work intensely, is innately contemptuous of talk, so futile even if agreeable. Psychology does not interest him. He is concerned with the thing done, with the result, not with the reasons. In a word, he is a painter. I remember a social function at his studio. He played the part of host with fervor, but from my quiet corner I docketed him among the good men of the world struggling against temporary adversity. The time came for the guests to depart. I was the last to leave. Happening to return, before I had closed the door, for something forgotten, I caught sight of him beyond the passage leading to the studio, flushed, eager, gazing upon his work. There was a look on his face that the pleasant social interlude had not been able to evoke — happiness, exhilaration, purpose — the look of one who has found something of which he had been bereft, the look of the artist, face to face with his art containing all the bitter-sweet potentialities of triumph or failure.

In his studios in Paris and Holland, and during the past winter in New York, I have seen many pictures by Gari Melchers — just beginning, in progression, and finished — and I have always felt that he is a man who counts, who must be considered seriously in any estimate of modern art, American or European, a craftsman who is striving toward perfection in his craft; an artist who abhors the pretty and facile, preferring even what the world calls "ugliness" if it but possesses strength and virility; a temperament that has evolved into a character whose aim is to be entirely itself, following its own development, disdainful of and indifferent to passing art fashions or the shibboleths of the nine-day schools and cliques posturing in the folds of some master's robe.

Kipling carved over his desk, placed in a room facing a street, the sentence: "Oft was I weary when I toiled at thee." Gari Melchers painted on the door of his studio crowning the dunes, overlooking the ocean, "Wahr und Klar"— truth and clarity.

Although I had studied many of his pictures, sign-marked with truth and clarity, it was a deprivation to know that I had never seen a representative collection of his works. A completely representative collection is, of course, impossible. The state galleries of Paris, Berlin, Rome, Munich, Dresden do not loan their treasures, and his frescos of "Peace" and "War" in the Congressional Library at Washington (which, in my opinion, share with Mr. Sargent's frieze of "The Prophets," at Boston, the distinction of being the finest frescos in America) must ever remain on those august walls. So, when, one morning toward the end of last January, I received a card announcing an exhibition of thirty-four pictures by Melchers at the Cottier gallery in New York, I felt that here was one more of the delightful surprises and unexpected interests that America offers to the wandering art critic.

The wise connoisseur values his first, swift, impressionistic glance round a collection of pictures. The eye is fresh; the *antennæ* of the senses are alert; the perceptions garner the impression of the full granary, and are content to postpone an individual examination of the grain. A glance, and I was conscious of a feeling of exhilaration. There was nothing anæmic about the canvases; no fumbling; no pretentious pseudo-classicism; no desire to convey a moral, or tell a story, just the straightforward thing, beautiful if the object happened to be beautiful, as "Little Constance," the very flower and freshness of childhood caught in the very act of its rosy and restless allure: ugly, if the object happened to be ugly, as "The Stevedore." Yet what is ugliness? The figure of a stevedore is not really ugly. Ask his mother; ask his sweetheart? Beauty and ugliness are matters of individual taste or geography. We call this stevedore ugly because his type does not happen to commend itself to Fifth Avenue and Bond Street. Any pitiable or plain thing can become beautiful under the magic of fine craftsmanship and light — the carcass of an ox by Rembrandt, a fat ballet-girl by Degas, or an old woman's nude torso by Rodin. Remember what the great Sir Joshua said: "A battered silk hat can be beautiful. There is light and shade upon it."

But my consideration of "The Stevedore" must await its turn. I looked round the walls. What kind of a painter is this? A superb draftsman! A frank colorist! Those attributes are evident to the most casual eye. A man concerned solely with his model, who is keener to consider a problem in painting than to produce an effect of conventional beauty. Simple themes attract him: goat-herds; shepherdesses; a fairy-tale told to a

child; two girls wandering in the dunes, as in the picture called simply, "Sisters," owned by Mr. Reisinger, with its delightful and personal color-scheme; an unobtrusive room, as in the "Interior," which gave opportunities for searching out reflections of light falling on a peasant woman's heliotrope dress, and the subdued chord of color running from red apple to purple wine, from lurid orange to brass candlestick, the whole enveloped in atmosphere. He paints the things near and known—a courtship, a bride, a wedding. Such subjects are eternal or banal according to the vision and treatment of the painter. What could be a more trite subject than a "Sailor and his Sweetheart," owned by the Carnegie Institute? Yet mark the craftsmanship of this picture, the feeling for character in the faces, mark the color-harmony of the girl's lavender and sage-flowered bodice. In technique the bodice is like some rare old piece of enameling, or some beautiful ancient fabric. He is bold and independent enough to affirm that the faces in a portrait-subject need not necessarily be the focal point. Consider "The Skaters," owned by the Pennsylvania Academy, a peasant youth and maiden striding through a wintry landscape. The faces in the picture are as unobtrusive as they were in nature. It was the magnificent flowered mauve cape that attracted the painter's eye, and the movement of the figures against the still background of unsullied snow. Consider "Audrey" knitting, while her goats browse on the upland dunes at a quiet moment of nature when a great summer-cloud obscures the sun. What a fine decorative scheme it is! How the picture fills the frame. Absorb its beauty as a whole and then note how subtle, yet how strong is the drawing of Audrey's pale-green bodice confining the young, full, unstayed bust, and how faithful is the texture of the chintz cape upon her arm, grown old and wooly with wear.

Contrast the picture called "The Delft Horse" with "The China Closet." I prefer the latter, for in "The Delft Horse" I submit that the painter has not quite made up his mind whether he was more interested in the lady with the stern face and the blue eyes, who is holding the quaint piece of Delft, or in the ware and its companion treasures. Beautiful is the painting of the Delft horse, the little Italian love, the Battersea box, and the old English enameled tea-caddy, beautifully the red table-cover merges into the black dress, splashed with white flowers, that the stern lady of the blue eyes wears. There is no division of interest in the companion picture called "The China Closet." Those graceful figures—madame, solicitous in rose and black silk, her maid, watchful in heliotrope—lead the grateful eye upward to the possessions they are rearranging in a green cupboard stored with rare china—so broadly yet so faithfully painted that one could whisper in the lady's ear, "And your favorites, madame, which are they?—the Leeds, the the Staffordshire, or the Delft?"

When a man paints what he sees, and again and always what he sees, the result is characteristically decorative, or characteristically non-decorative, according to the subject. The portrait of Mr. Henry C. Cunningham is as straightforward and vivid as that of Mr. [illegible] Stroh—each is the man hi[illegible] William Rainey Harper, of [illegible] had many sterling quali[illegible] set forth in the strong, p[illegible] of him; but his was obv[illegible] or pictorial personality, [illegible] canvas a plain, blunt, [illegible] the slightest suggestion c[illegible] ment. Good! Mrs. G[illegible] and attractive person, [illegible] home in a decorative [illegible] southern garden. So [illegible] arrayed herself in a [illegible] perhaps trying its e[illegible] colored, filmy swath[illegible] stood in front of a gr[illegible] by a wall-paper of [illegible] and streaming down[illegible] his picture, saw all th[illegible] scheme, and wrought [illegible] tive canvas. Wrought [illegible] Examine the painting of [illegible] construction of it, the colo[illegible] to produce the sheen of the w[illegible] how the figure swells in the [illegible] drawing and modeling of the face.

The art of painting a fine decorative picture is rare. That it is one of Mr. Melchers's gifts is shown by this portrait of "Mrs Melchers" and also by the splendid figure in profile called "A Fencer," strong, straightforward, sincere. The alert head, the ease of the relaxed muscles, the sweep and crumple of the baggy trousers with real legs beneath them, are masterly. With "The Lady" and "A

10095

A FENCER

10094

Owned by Mrs. Potter Palmer

Copyright, 1908, by Gari Melchers

AUDREY

THE CHINA CLOSET

Copyright, 1908, by Carl Melchers

Owned by Mr. James Deering

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MOTHER AND CHILD

Owned by Mr. Harrington Walker

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THE KISS

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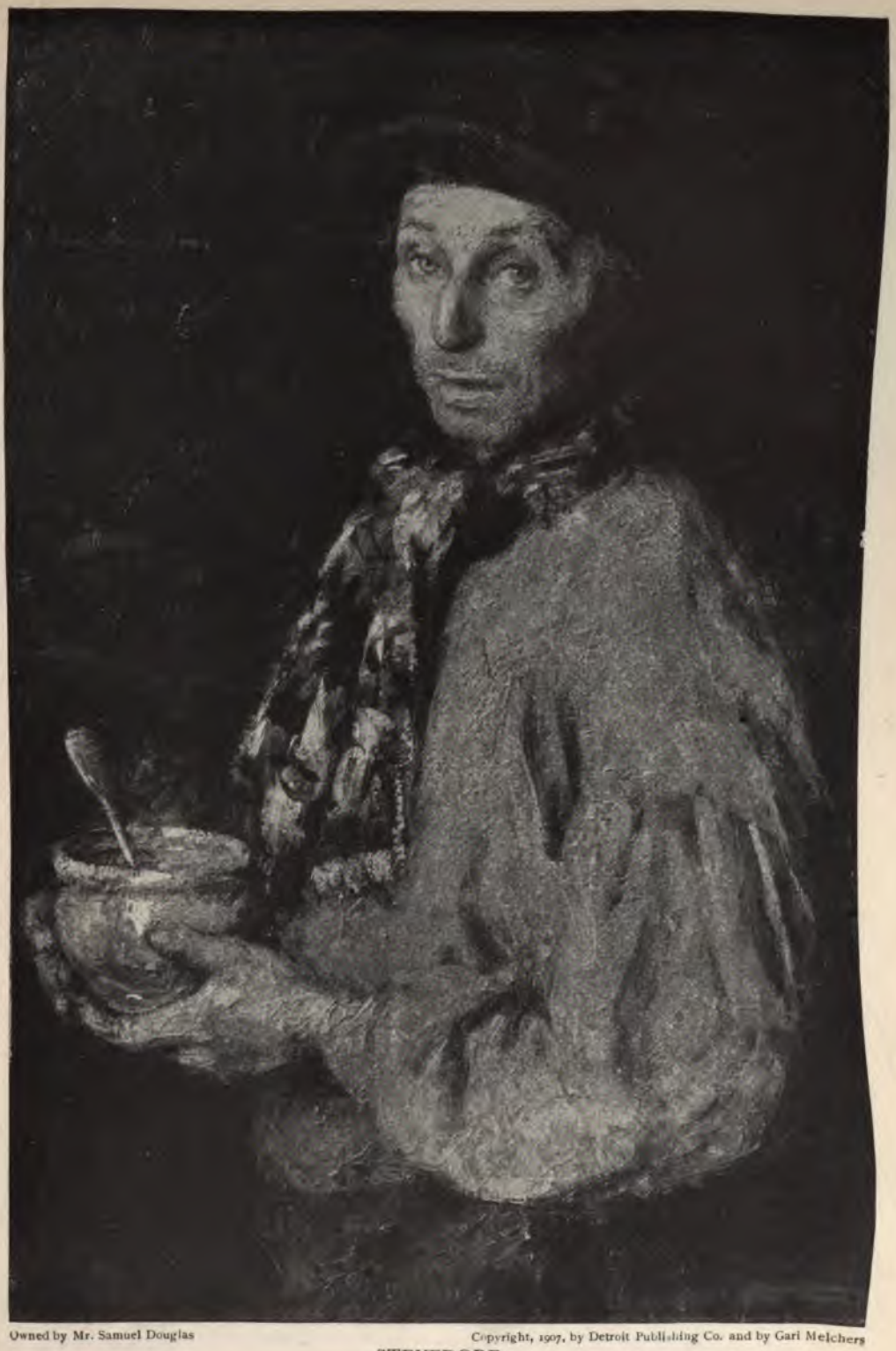
THE BRIDE



Owned by Mr. Samuel Douglas

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STEVEDORE

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MRS. GARI MELCHERS

Fencer" as exemplars, I should like to see Mr. Melchers paint a modern fresco, that is, a fresco inspired by the life of our time. Why is it that at the mere mention of the word fresco the most alert of moderns immediately jumps back five hundred or a thousand years? Perhaps Mr. Melchers will break this convention. We look forward to seeing, at an early date, an addition to his achievements in fresco. It is an open secret that he has just been commissioned to paint for the Providence State House a decorative portrait of Nathaniel Greene to hang as a pendant to Gilbert Stuart's portrait of Washington.

I see "The Stevedore" and "The Bride" as a pair. This virginal peasant girl stands, half-reluctant, half-eager, with something of fear as well as wonder and resignation in her face, upon the threshold of her destiny. She is set down just as she looked. Her unharassed face, beautifully drawn and tenderly modeled, looks out a little wistfully from the blue background of the picture. On hair and in hands are the symbols of the ancient lottery. The tones of the white dress compose into a harmony of freshness and innocence, symbol of this unsullied, untried maiden.

"The Stevedore" shifts the kaleidoscope of life. He has been tried and found wanting. What else could be expected from that weak mouth and those vacant, shifty eyes? How subtly the articulations of expression in the face are rendered, and the scarf, how broadly and confidently it is painted. The hands holding the porringer suggest — but here I come to a point that must be labored a little. The painter paints what he sees, or rather what he chooses to select from what he sees, without troubling himself to analyze his motives or his "state of soul." The critic explains, or thinks he explains, or amuses himself, and often bores his readers, attempting to explain the unconscious mental processes of the painter. Mr. Melchers chose to paint this picture because his eyes told him that the model at that moment was good to paint. I ask myself why he thought that moment good. The answer is that this wastrel is caught at an expressive instant of his life. He has but few luxuries; one of them is food, another is warmth. He cannot afford to squander his fugitive luxuries, and so before eating his dinner he grasps the preparatory joy of warmth, letting the heat of the porringer steal through his numbed fingers. In that cursory joy he half forgets that he is hungry. It is the stevedore under the influence of this cursory joy that Mr. Melchers has painted.

In writing of a painter one admires, it is often difficult to restrain the pen from superlatives; but when I write of Mr. Melchers's young children and babies I feel that I may allow my enthusiasm an unimpeded rush of admiration. Of all models, the infant is the most difficult. It offends against the elemental requirements of a model: it never keeps still. A man must be very sure of himself, a very expert and masterly draftsman, to be able to indicate the construction and accents of an active baby's face and form. Glance at his pictures of "The Kiss" and "Mother and Child." Here are real infants, pulpy, protesting, indifferent, or fretful little faces, with round heads rolling on plump bales of bodies that they cannot control. To me there is something almost tragic in the picture called "The Kiss." There is nothing of the formal family salute about this kiss. This woman is kissing her baby fiercely, with something of the intensity of a savage animal mothering a favorite item of its brood. The observation of the painter is so acute that you can see the woman's nose digging into the soft cheek and the infant's lower eyelid being pushed upward by the disturbance of the flesh. The hands of the mother are wonderfully drawn. Here, too, Mr. Melchers shows his love of color in the sleeve of the baby's dress, lines of black on bright red, and the green swaddling band.

The color of a "Mother and Child" is very reticent. The artist has allowed himself no more than the brown of the mother's face, hair, and dress, and the dull white of the child's little garment. Only in the eyes is there color — the mother's are green, those of the child are blue. In this most beautiful picture I think Mr. Melchers has reached a very high point of his achievement. To perfect craftsmanship he has added, consciously or unconsciously, that indefinable something which Maeterlinck calls the *raison mystique.* Raphael in the Sistine Madonna, speaking for the early sixteenth century, deified the Child. In this picture we find Motherhood illuminated by divinity. The baby is a mere baby. In the calm, self-contained face of the mother, steadfast and strangely wise by reason of

some interior knowledge of divinity, the early twentieth century speaks.

To landscape, as I have said, Mr. Melchers turns for relaxation. It must have been a pure delight to paint those Flemish plains on canvases a few inches square, and the view of the North River with its sense of desolation, cold, and litter. "Green Summer," a large and brilliant picture of early morning sunlight piercing through the trees where a group of women are seated, "The Arbor," another powerful rendering of a similar effect, paler, as the beams of the sun were less direct, and a third and smaller picture called "Under the Trees" may have been relaxations, but these studies in sunlight and reflections are so true that they become majestic illustrations of the ways of the sun at different hours when impeded and diverted by the rich greenery of full summer.

To have watched the career of a painter, to have retained, through years of familiarity, a high respect for his methods and achievement, never to have encountered anything flippant, weak, or unworkmanlike — is to feel admiration and gratitude for that career. "Nothing matters in this world to the painter," he once said, "but a good picture. And it must be a mighty good one to compete with those already done. Galleries are full of masterpieces, and the bad painter has no place—and he should have none."

Our age is clever and precocious. Most of us are in a hurry, and short roads abound. To take their good where they find it, and to make it their own, is the method of many painters whose inspiration is not far to seek. Much of the work produced to-day might be shuffled together and picked out at random, and only the learned in art could tell which was original and which was the follower, so clever has artistic plagiarism become. The work of Mr. Melchers is full of that essential quality, personality. He derives from nobody: he need never sign a canvas, and yet you would know its parentage.

A word or two about his life, which began at Detroit in 1860. His mother was of French descent, his father German. German thoroughness, French intelligence, and American intuition should produce a good composite. It has. His father, who was a sculptor and a pupil of Carpeaux, sent him in his eighteenth year to Düsseldorf, thinking that the sleepy little German town was a safer working place for a boy than Paris. Mr. Melchers went to Düsseldorf, in compliance with his father's desire but, in compliance with his own, he did not remain there long, although he has nothing but gratitude for his master Von Gebhardt and the painstaking methods of Düsseldorf.

Visiting one day a small collection of French pictures, he decided that he must see more of that kind, and forthwith left Düsseldorf for Paris. Obliging friends forwarded his letters — Detroit being too far away (so he assumed) for intelligible explanations to his family of the reason for his departure. In Paris he studied at Julien's under Boulanger and Lefèbvre, and also at the Beaux Arts. He was soon known as a hard-working student with whom it was not wise to trifle. His companions also discovered that he was not gregarious when at work. When Mr. Melchers is communicative (which is not often), he will tell delightful tales of these student days, for his observation of men and manners is keen. He keeps a warm memory of his fellow-students, and for old Mère Nye, whose restaurant they frequented and who boasted that her "boys" never went hungry during the siege of Paris. This wonderful woman actually had a ham uncut when the Germans departed. She had a novel way of keeping her books. When the Salon opened she would buy a catalogue, find out if her boys were "in"; if they were she considered their credit good. If not ——!

Pictures quite dissimilar from his own he appreciates. It is interesting to know that Mr. Melchers was the first to apply for permission to copy Botticelli's fresco of "Giovanna Tornabuoni" when that unapproachable work was first acquired by the Louvre. Puvis de Chavannes was one of his friends among the elder men, and Mr. Melchers possesses to this day that master's Chevalier's Cross of the Legion of Honor. Thereby hangs a pretty tale. On the day that Mr. Melchers had himself received the decoration, he visited the master. Puvis complimented him, and taking from a bureau his own faded ribbon and cross that he had received from Napoleon III., presented it to Mr. Melchers.

If Gari Melchers has not all the honor that his own country might bestow upon him, he has nearly all that a painter can obtain abroad. In 1885 came his first recognition, an Honorable Mention from France for "The Sermon." It was followed, in 1889, by the blue ribbon of art — a medal of honor in Paris. He was then twenty-eight. Only

three American painters have won this coveted distinction — Whistler, Sargent, and Melchers, Whistler receiving it ten years later than the other two. He has been awarded medals of honor in every capital of Europe where they are bestowed. He is officer of the Legion of Honor of France, Knight of the Order of St. Michael of Bavaria, Knight of the Order of the Red Eagle, Germany, and National Academician of New York. Pictures by him hang in Paris, Berlin, Munich, Dresden, and Rome, and he is represented in many collections abroad and in America.

No one who has seen these pictures in foreign galleries — strong, human, fine in colour, looking as if they would age well — can doubt that he is a force in modern art. His "Family" hangs in Berlin — a father, mother, and children: the mother blond and wholesome, the father compact of the pride of paternity and contentment with his orderly house — a well-composed, well-painted picture, beautifully drawn.

"Maternity" is at the Luxembourg, a presentment of a peasant mother, capable, hopeful, tender. Lovely is the garment she wears, the golden hair smooth under the broidered cap, broidered flowers rioting in yellow and turquoise over her bronze-colored cloak: the baby, serious, wise-looking, nestling in its mother's arms. This every-day theme has become salient, significant — a picture that painters approve, that everybody loves.

"The Masterbuilder," in Dresden, is masterly in its quick, strong line and almost brutal in frank achievement; his "Man with the Cloak," in Rome, firmly modeled, is as serious and dignified as a Moroni — "Wahr und Klar" — as is everything that he paints. His "Supper at Emmaus," owned by the Krupp family of Essen, is one of his notable religious pictures. Among his other religious subjects are two of "The Last Supper," one with the double light of day and lamp, the other of daylight only. To paint thirteen life-sized figures in a picture is in itself an achievement, but to paint two such pictures, each of which has thirteen constructed types, would seem to most men a task of supererogation! But that is Gari Melchers, never giving up until he is sure that he has achieved his best.

Is it not astonishing that the Metropolitan Museum of Art, New York, should not possess a single picture from his brush? That is another of the surprises that meets the Englishman wandering over America.

LIBRARIES THAT REACH ALL THE PEOPLE

INCREASING THE EFFICIENCY OF WORKINGMEN, LESSENING THE ISOLATION OF FARM-LIFE, HELPING ALIENS TO BECOME INTELLIGENT CITIZENS, AND MEETING OTHER NEEDS

BY

IRENE VAN KLEECK

THE changed activities of our public libraries from the time when they catered only to booklovers is shown, for example, in a few of the applications made to the Buffalo library in a single day. A tailor's apprentice wanted a book on the cutting of garments; a printer wanted to be sure about the correct size of visiting-cards; a mechanic needed a method for finding the length of the third side of a triangle. Then came another workman with a request for information about the manufacture of artificial ground glass; a lineman wanted to know how to prevent grounding by induction; a decorator wanted an allegorical figure for a coat-of-arms; a dyer asked for a formula for mixing a certain color. A foreman in a large plant came to look up the subject of pouring aluminum, and he afterward wrote that he had succeeded at the first trial.

LIBRARY EFFORTS TO BE HELPFUL

The librarian is no longer chiefly interested in "the best-sellers"; the most helpful books

for the trades represented in his community now come in for a share in the appropriation. In the old days the chief concern was to get back the books that had been loaned; now it is to get books into the hands of people who need them. In Providence, R. I., where 70 per cent. of the wage-earners are engaged in three industries — textiles, jewelry, foundry and machine-shop work — the library has made a special study of those subjects and collected nearly 10,000 volumes, with printed lists and comments that enable a workman to find exactly what he wants. A drafting-table, tracing-paaper, "dark-room" for developing plates, and other conveniences are provided. Men often come directly from their benches to find a solution of some problem that has confronted them. The practical utility of this service has received the recognition of the employers; the association of manufacturing jewelers contributed $125 to aid the library in buying a set of 610 volumes of Patent Office publications, which are in constant demand. "I am getting $2.50 a day," said a mechanic to the librarian, at Springfield, Mass., "but by next fall, when I have finished with these library books, I shall get $3.50 a day — and be worth it." One of the New York branch-libraries is regularly used by the workmen of a large electrical power-house because they have found it a means of promotion from low-grade jobs to the position of assistant-engineer. Cincinnati and other cities where great industries are located render the same kind of helpful service. An average of about 300 workmen, inventors, attorneys, and manufacturers consult the industrial arts department of the Cincinnati library daily, securing information worth many times the cost of the entire library. It is estimated that one set of books obtained from the library saved the city in ten years more than $300,000 by influencing a lower charge for gas.

The local newspapers are effectively used by many librarians to get people interested in certain classes of books. For thirty years, without missing a single week, the Providence, R. I., papers have been supplied with library notes. In St. Joseph, Mo., an automobile enthusiast wrote to the librarian, suggesting the purchase of two books in which he was interested. The librarian replied that the books were already on the shelves, and that he could also obtain a number of others on the same subject. This incident led to the publication in an afternoon newspaper of a list of books on some industry, a different subject every day for thirty days. As a result, the demand for books nearly doubled within four months. This method of stimulating the demand was occasionally the cause of criticism, for it was not always possible to foresee the "run" that would be made on a certain subject. A motorman kept coming for a book which was "out." Finally his patience became exhausted. "I want to stay on the main-line," he said to the librarian, "but if I can't make good with the air-machine I go to a dinky short-line. I pay taxes and I want that book and want it bad." He was pacified with the information that it would be reserved for him after it was returned. A few days before the book came in, however, the librarian received this note from him: "Keep your durn book! I bought one this morning. The library is no good to a man who can't get the book he wants when he wants it."

Industrial exhibits and lecture courses are other forms of publicity work that are demonstrating library usefulness. The Newark, N. J., library arranged an exhibit of the materials and processes used in bookbinding; it attracted such wide attention that it was afterward borrowed by forty other cities. The Binghamton, N. Y., library prepared an exhibit showing how the city drew upon the entire world for its manufacturing materials. Its shoemaking feature, for instance, began with the untanned hide and went through fifty processes to the finished shoe. The exhibit attracted a daily attendance of 400 people for two weeks. As a part of the library's annual lecture course, an expert from the Lackawanna Railroad explained the use of the air-brake, and an official of the city's light, heat, and power company gave a lecture on its public-service work. To meet the calls for books on electrical and other industrial subjects, the library found it necessary to duplicate many of its volumes. In another town more than 200 copies of one volume taken up in a lecture course were sold by the local bookstores.

Some librarians, however, are not satisfied with efforts to attract in this way. One man in New York went before a meeting of a plumbers' union and told them about the books in his library that would be useful to them in their trade. He showed them illustrations and drawings, and convinced them that they

could get definite help from many of the books. Then he went to the secretaries of various other unions and did the same thing. From that time on he was kept busy in making good his promise to supply the books. Another librarian prepared a list of books about printing and sent it to all the printing-plants in his city. He immediately received a request from one firm for fifty additional copies.

The Detroit library has gone a step farther and tried the experiment of placing collections of books in the factories where the men are at work. The books supplied to each factory relate chiefly to the industry that it represents and are mainly in the languages of the workmen employed. A method has been worked out whereby it is easy for the manufacturer to become responsible for the books, and not a single volume has thus far been lost. Only one visit a week from the library assistant is required. The success of this plan of course depends largely upon the coöperation of the manufacturer.

All these efforts to reach the industrial life of the community may perhaps seem distressingly commercial to the lover of rare manuscripts, who sees in the library only a museum of ancient lore, but they are bringing the people and the books together.

LIBRARIES ON WHEELS

Into the isolation of farm-life, which rests with particular heaviness upon ambitious boys and girls, has come the rural library. It may be seen at its best in the South and the Southwest, where it meets the greatest need. A fair sample of its work is that of the Hagerstown, Md., library, which runs a delivery-wagon over sixteen rural routes. Its driver is everywhere greeted with the cordiality that a mail-carrier would receive, for he also is a means of communication with what is to to be found in the outer world. Stops are made at the farmhouses throughout the district, plenty of time being given to each family for selecting the supply of books that must last them for three months. The annual report of this library's rural activity says that the demand for "the best sellers" is unknown and that books of permanent value are rarely brought back at the end of the trip.

That a library may have a direct economical relation to the farmers themselves has been shown in the experiments of the county library at Portland, Ore. One of its officials attends regularly the various meetings of the farmers' societies, helping them with their programmes, and making them acquainted with the purpose of the library. A personal letter, with application cards enclosed, has also been sent to every postmaster in the county. The extension of the work has been so rapid that about thirty reading-rooms have been opened. Whenever a "grange" asks for books on taxation, railroad rates, and other subjects much discussed, care is taken to include in the collection the authorities on both sides of the questions. And the people for whom this library is intended are making good use of their opportunity. At one station, where books were to be exchanged, the women of the community sent in a request that they be allowed to retain the library's cook-book until after the pickles were put up. Into another station walked a long-haired country lad, who had come from a ranch several miles distant to get a book that would explain how to cast the parts of a rotary engine that he and another boy were trying to put together. Farmers with a new house or barn to be built, with problems of fertilizing to be worked out, with plant or orchard pests to be exterminated are learning that the library can quickly furnish information that it would require several weeks to get from other sources.

HELPING THE FOREIGN-BORN

Those who come to America to join our ten millions of foreign-born residents often find that they have come too late in life. The public schools take care of alien children, but the immigrants of maturer years must get even the practical part of their education "by hard knocks." Here, again, the libraries of many cities are furnishing helpful instruction.

The newly landed immigrant needs a larger vocabulary than that which he picks up while at work, and he also wants to know something about the laws of his new country, and especially the police regulations of his own city. He wants to know what constitutes a legal marriage, how men get office, why one man is elected and another is appointed, what becomes of the tax-money, and a hundred other things. He is likely, at any moment, to break some municipal, state, or Federal law because of his ignorance. Formerly, when he went to a library for "something about America in my own language," he was either turned

away or given some theoretical treatise on a subject which Congressmen themselves have never been able to clear up. The next morning, perhaps, he might be arrested for violating a regulation of the Board of Health; or an officer might severely reprimand him for not sending Maria and Antonio to a public school of which he had never heard.

If the immigrant's perplexities arise in Passaic, N. J., he may go to the Reid Memorial Library and receive an explanation of his problems, printed in his own language. More than half of Passaic's population is foreign-born, and the library is doing much to help them become useful citizens. Small collections of books in Slovak, Hungarian, Roumanian, Bohemian, and Italian were first made, and then newspapers from their home towns and periodicals of wider scope were added. Gradually the library became the meeting-place for all important educational and civic gatherings. They were made to feel that the library was interested in their welfare. For instance, the seven Slavonic societies were each asked to designate a member to serve on a permanent committee for the selection of books needed by their people.

This library became such a vital part of the social life of its foreign-born residents that they organized evening study-clubs for various nationalities — each having a director who can speak its language — and their meetings are held in the library. The direct influence of this activity in relieving the congestion of criminal courts and reformatories was so marked that the Governor of New Jersey endorsed a bill to provide similar classes in other cities. This, the first state law to provide education for adults except in state universities, will shortly be put in operation.

LIBRARIES FOR THE HANDICAPPED

Various other classes whose needs are inadequately met by the public schools, or met not at all, are being helped in a practical way by libraries. In New York City many evening schools get from the libraries books for the use of students who are prevented by long working hours from visiting the branch libraries. The students of these evening schools include almost every race, and there is no age-limit. It was said that it would be unsafe to try to circulate books in these schools, as no dependence could be placed upon the students; yet very few books have been mislaid. Many mothers and daughters are supplied with books on millinery, dressmaking, and housework, in order that they may not only do their own work better but may also fit themselves for positions that will help them earn a livelihood.

The boy who quits school "for good" often leaves entirely behind him the whole world of books just at the time when he needs most to know how to use them. The boy who works in a store or office and attends night-school will repay particular attention from the library. In Grand Rapids, Mich., the librarian secured from the principals of the schools the names of all the pupils that have left school permanently, and each receives a personal letter and a leaflet entitled "The Right Start, or Don't be a Quitter." It tells him how an education may be continued outside of school and invites him to call at the library.

The blind and other defective classes share in these educational benefits. Among other cities, Cincinnati has a library society for the blind, with instructors to teach them. One of its reports mentions that nearly a hundred have been taught to read; twenty-one have been taught to write; and twenty-nine had been shown how to use writing-boards. It is interesting to note also that thirty-two blind persons had been taught how to thread a needle. The necessity for such instruction grows out of the fact that a large percentage of the blind lost their sight after reaching maturity and are not eligible for instruction in schools. New York has a library for the blind, which is open four hours a day. It has more than 2,000 volumes and circulates an average of 700 a month in the states of New York, New Jersey, and Connecticut. A special regulation of the postal service allows these books to be mailed free of postage. Philadelphia sends more than 5,000 volumes from its library to the blind in every part of the United States and its possessions.

All these various forms of library activity simply show the direction — not the volume — of efforts to give instruction of practical value. The instances could be duplicated many times, and to them might be added other examples of the usefulness of collections of books. The encouraging point to be noted is that education need no longer stop at the outer threshold of the public school-houses.

THE ROMANTIC STORY OF A SCIENTIST

THE WORK OF PROFESSOR HANSEN IN DISCOVERING AND INVENTING FRUITS AND FORAGE THAT WILL STAND SUB-ZERO WEATHER

BY

WILLIAM PAUL KIRKWOOD

IN ONE of the extreme eastern counties of South Dakota, in a town of 3,500 people, which lies on an almost flat stretch of what was once called the "Great American Desert" — sweeping away to the southward, westward, and northward for hundreds of miles — lives Niels E. Hansen, who by artificial evolution is improving on the slow processes of Nature, and effecting a redistribution of the plant-life of the earth. He has set himself the mighty task of advancing the limits of orchard and small fruits northward on this continent from one thousand to two thousand miles. He himself, in his modesty, would doubtless prefer to say that his task is merely aiding such an advance. Those who know his work, however, recognize him as the leader of the movement, and the movement is the spreading of orchards over the Great American Desert, in spite of the allied forces of intense cold, blighting drouth, blasting winds, and plant diseases. It is a war against nature for the homes of the Northwest, for, as Professor Hansen says, "True home-making upon the open prairies requires successful fruit-culture."

Plainly the work of this man is big with meaning to the future of the nation as a whole, and to the future of the great prairie empire of the middle Northwest in particular. It will help toward the future — the near future — welfare of a nation whose needs are increasing amazingly; it means an immense increase in the productive wealth of the nation; it means richer and better satisfied farmers; it means more prosperous business and professional men; it means better-equipped schools; it means for all a higher plane of living.

FROM EDITOR TO SCIENTIST

Niels Ebbesen Hansen is the head of the horticultural and forestry department of the South Dakota Agricultural Experiment Station, which is connected with the South Dakota State College of Agriculture and Mechanic Arts at Brookings, S. D. Professor Hansen was born near Ribe, Denmark, January 4, 1866. His paternal grandfather was a large farmer of much local importance, having held one township office for fifty-three years, and having won from his king the decoration of the Order of Dannebrog, an order of merit. His father, Andreas Hansen, was an artist of exceptional ability, and proved himself also a valiant soldier in the Danish-German war of 1848-50. Andreas Hansen, with his family, came to America in 1873, and in 1876 settled in Des Moines, Iowa. His son, Niels, early showed a fondness for books and for Nature. He would often take long tramps over the prairies and through the woods, collecting natural history specimens. He had a habit as he grew older, too, of browsing among the books of the Iowa State Library, and there he attracted the attention of the Secretary of State, Mr. J. A. T. Hull, now a Congressman from Iowa, who, though the boy was scarcely known to him, gave him a position in his office. This meant more reading for the boy, and after two years, at the age of seventeen, he entered the Iowa Agricultural College at Ames. At that time his intention was to become an editor.

But editorial ambitions were abandoned before long. The young man came in contact with the late Professor J. L. Budd, head of the Department of Horticulture, to whom he now refers as "the Columbus of Western horticulture," a man of great originality and inspiring personality, from whom Mr. W. M. Hays, Assistant Secretary of Agriculture, and other leaders in the same great line of work have drawn their enthusiasm. This contact with Professor Budd meant for the youthful Hansen conversion to the philosophy and art of

horticulture. When he graduated from Ames in 1887, his thesis was on "The Crossing and Hybridizing of Our Native Fruits," which shows that at the age of twenty-one he was headed straight for his present great work. For four years after his graduation, he labored in large commercial nurseries in Iowa, and this experience, supplementing his theoretical training in college, gave him an insight into the problems of Northwestern horticulture that was invaluable. Then Professor Budd called him back to Ames to make him assistant professor of horticulture, and in 1894 sent him on a four months' trip of plant exploration and study to Russia and seven other countries of Europe.

This first trip abroad brought to a focus several ideas that before had only been dim in the young man's mind, and prepared him for the three great contributions which he has since made to the horticulture and agriculture of America, and for others he will doubtless make in the same field. The three contributions alluded to are:

THREE GREAT ACHIEVEMENTS

A new principle in plant philosophy, and a new plan of plant campaign against the rigors of northern climates.

New plant "inventions," made or in making, of vast importance to the fruit industry of the nation, and especially of the Northwest.

Two plant-exploration expeditions of great economic value — directly to all that part of North America north of the fortieth parallel, and indirectly to the whole continent north of Mexico, if not, indeed, to Mexico and parts of South America.

(I) A NEW PRINCIPLE

While on the trip to Europe on which Professor Budd sent him, a new light broke upon the young man. The results of this, now demonstrated beyond doubt, promise to revolutionize plant-breeding in America and throughout the world. This new light was the first flash of a principle with which Professor Hansen last October startled the International Conference of Plant Hardiness and Acclimatization in New York City.

"My belief," he says, "is that perennial plants cannot be accustomed or habituated to endure a greater degree of cold to any considerable extent — that hardiness cannot be bred into a plant by selection alone. With the apple, the raspberry, the grape, alfalfa, and clover, no noteworthy progress has been made in making plants hardier by selection from tender stock. If hardiness is to be gotten into perennial plants, it must be by hybridizing or crossing with some plant that nature through several millenniums has made hardy. Man must work with nature, not against her. Even the so-called acclimatization of annual plants is now to be considered as merely a sifting out of unfit elementary species, as appears from the recent wonderful work of Dr. Nillson, at Svalof, Sweden, in breeding hardy cereals."

The smouldering fire which led to the flash that came to Professor Hansen in Europe, came from an early reading of De Candolle's "The Origin of Cultivated Plants." Many others had read the same book, but they seem to have overlooked the following paragraph, which stuck in Professor Hansen's mind:

"The northern limits of wild species. . . . have not changed with historic times, although the seeds are carried frequently and continually to the north of each limit. Periods of more than four or five thousand years, or changements of form and duration, are needed apparently to produce a modification in a plant which will allow it to support a greater degree of cold."

With the new light, derived from De Candolle's theory and his own observations, Professor Hansen returned to Ames and resumed his work, under Mr. James Wilson, now the Government's Secretary of Agriculture, who was then director of the school at Ames. Then destiny called Professor Hansen to the frontier of the orchard and small-fruit belt in the Middle West, and there — at Brookings, S. D.— he decided to "follow the gleam" that had come to him in Europe, and, if possible, by it to commence, at least, the great work of advancing the limits of such fruits from one thousand to two thousand miles northward: first, by the selective development of fruits already inured to extreme cold through the processes of the ages; and, next, by crossing or hybridizing tender plants from milder climes with the hardy plants which thrived in the North.

(II) THE INVENTION OF NEW PLANTS

His second contribution has been in the results obtained through a long series of ingenious and exacting experiments based upon

PROFESSOR HANSEN'S BREEDING STATION IN WINTER
Where hundreds of thousands of cross-bred fruit-plants and trees are subjected to freezing tests

A RASPBERRY PATCH BEFORE THE WORK OF SELECTION

A RASPBERRY PATCH AFTER THE WORK OF SELECTION

PROFESSOR NIELS E. HANSEN
At work in his greenhouse, crossing plum and sand-cherry blossoms to produce a hardy and marketable fruit

THE SAPA PLUM

A non-freezing cross between a sand-cherry and a Japanese plum, originated by Mr. Luther Burbank

THE HANSKA PLUM

Obtained by crossing a wild plum with the Chinese apricot-plum. It will live through weather 40 degrees below zero

WILD PRAIRIE STRAWBERRIES

Collected by Professor Maxon, and used for breeding to produce hardiness

MARKETABLE STRAWBERRIES

This have been cross-bred from prairie strawberries. They will stand adverse weather

THE THIAN-SHAN MOUNTAINS
Between Turkestan and China, along which Professor Hansen traveled hundreds of miles

KIRGHIZ TARTAR CAMP NEAR KOPAL, TURKESTAN
Near which Professor Hansen had to abandon the trail of hardy alfalfa in the winter of 1897-98

A RUIN NEAR KARAKUL, TURKESTAN
On the route of Professor Hansen's journey in search of hardy plants for the northern American prairies

ALFALFA BAZAAR IN TASHKENT, TURKESTAN

CROSSING A RIVER
On the trail of a hardy alfalfa

PROFESSOR HANSEN'S TARANTASS
Which carried him 1,300 miles

ALFALFA AT IRKUTSK, SIBERIA
Professor Hansen could not obtain seed, so he bought the hay and had the seeds picked out by hand

his principle of plant hardiness and how to obtain it. These experiments necessitated first of all the assembling and development by selection of a large number of hardy native plants. To obtain these, Professor Hansen from time to time made exploratory expeditions over the prairies of western South Dakota and of North Dakota, among the Sioux Indians, through the Black Hills, into Manitoba, and elsewhere. He also opened up correspondence with many others — north, south, east, and west — interested in the same subject. The results obtained by these trips and by this correspondence gave him abundant material on which to work. In time there was added to his equipment at Brookings a plant-breeding greenhouse, the first of its kind in the world. This gave opportunity for the hand-crossing of plants under glass, where bees and winds could not play havoc with experiments by distributing pollen where it was not wanted. Then went forward still more rapidly the work of putting to the test Professor Hansen's theory of crossing tender with very hardy plants in order to invent fruiting plants that would stand at least forty degrees below zero without any protection whatever.

Among the early experiments were those with the strawberry. In the course of the past eight years, thousands of blossoms have been cross-fertilized, the delicate pollen or dust from the blossoms of one variety of plant being carried by hand to the blossoms of another, and with knife-point or camel's-hair brush placed just where it would cause each touched blossom to fructify. Each cross thus made has been carefully noted and each plant painstakingly ticketed, so that favorable results with any individual cross might be reproduced at will. Out of the first lot of 8,000 hybrid seedlings, about two hundred and twenty-five were saved, and these were afterward largely reduced, showing the exacting thoroughness of the work done. Out of all the thousands of seedlings put to the test, only two were until recently sent out to the public for propagation. These two were known as South Dakota No. 1 and South Dakota No. 2. The fruit of each of these was conical and a good inch in diameter. The quality of both was high. While they could not compete with any of the standard market varieties in size, they were remarkable for one thing — they did not have to be covered up in winter and nursed through the months of extreme cold. Even the bitter cold of the plains of Manitoba did not kill the plants. Here, then, was an invasion of the realms of winter that meant something.

But Professor Hansen was not satisfied. His partial success only stimulated him to further effort. Thousands of plants which showed weakening under cold went to the bonfire. "From the ashes of millions of seedlings," said the professor, "will arise Phœnix-like the new creations which will dominate our future prairie pomology" — and he went on crossing and selecting, crossing and selecting, until South Dakota No. 1 and South Dakota No. 2 were far surpassed. Beginning with the wild strawberry of the prairies, he produced a berry that would tempt any appetite and satisfy any buyer in the market and, what is more, that would grow on a plant which a Dakota winter could not kill — a plant rising to the demand Professor Hansen makes of all his fruit plants, which is that they shall survive winter weather without protection. As he says, he wants "no horticulture on crutches."

Along with experiments with the wild strawberry of the North have gone similar experiments with the wild raspberry. Getting a wild raspberry from the border-line between North Dakota and Manitoba, this champion of fruit-hardiness crossed it with the Shaffer, a large variety from New York, using the pollen of the New York plant. The result is a berry of good size, fine flavor, and perfect hardiness. The plant lives through a temperature of forty-one below zero without protection of any kind. Native Indian plums and other hardy fruits of the Northwest have been successfully crossed with the common cultivated varieties from California.

Hardy shrubs with richly colored foliage being scarce upon prairie lawns, Professor Hansen sought to remedy the defect. He used the sand-cherry, selected by himself on gumbo bluffs in the land of the Sioux Indians, where an occasional rattlesnake added zest to his quest, and crossed it with a purple-leaved plum from Persia (*Prunus Bissardi*). The result is a whole brood of hardy shrubs with glossy purple foliage, the best of which will take a sure place in that art as yet almost unknown, prairie landscape gardening.

The taming of the wild roses from the hunting grounds of the Indians and from the

plains of Siberia has marked another incursion by this northern plant inventor into the field of æsthetics. In this direction he has made great progress, but as yet he has named none of his thousands of seedlings.

The few results cited are only illustrative. They make but a fraction, and a small fraction, of the returns obtained from the Brookings horticultural plant, now first in importance for its work with hardy plants, and second only to Mr. Luther Burbank's station from any point of view. Hundreds of thousands of seedlings are being worked with in the hope of improving already hardy varieties of fruits by careful selection. The acid sand-cherry itself, for example, has been by selection made over into a cherry of good size and tempting flavor. Again a vast deal of hand-crossing is being done in further efforts to infuse the extreme hardiness of native fruits into cultivated species, without sacrificing the size and quality of the latter.

Professor Hansen takes nothing for granted. For instance, most botanists hold that the graft-hybrid is scarcely among the possibilities. Professor Hansen is giving the problem a thorough trial. It involves the double operation of grafting and hybridizing. In his work on this line the professor has split hundreds of apple scions, or twigs, through the bud, and united corresponding halves of two distinct varieties, and then inserted the united scions by side-grafting upon whole roots of common apple seedlings, in the hope of obtaining an apple fit to withstand the climate of the Northern States. What kind of fruit it will yield it is impossible to predict. This graft-hybrid, however, is only a part of the work that is being done at Brookings to give the Northwest an apple that will meet the requirements of exacting tastes and of commerce. Thousands upon thousands of apple-trees raised from seed with the extreme patience that the work requires are being put to the test of trial by frost, in the belief that in the amalgamation of some of the promising apples of three continents will be found the hardy winter apple that the fruit-growers of a dozen Northwestern states are awaiting, not altogether with resignation toward the delay.

With others in this line of work, he sees that the potato problem alone is worthy of the persistent attention of the keenest horticulturists of the entire country. As the spectre of the potato famine in Ireland some sixty years ago stalks in the background, he looks upon "the man with the squirt-gun," spraying with solutions of copper salts, as merely a passing phase. The disease must some day be eliminated by the evolution of a blight-resisting potato.

In the light of all that has been done in the South Dakota Experiment Station, and in the light of all that this master, as a result of his experience, says may be done along the lines indicated, the day does not seem far distant when there will be a well-established synthetic horticulture by which fruits will be invented to order, though perhaps not "while you wait." Professor Hansen believes that such a day is coming. When it does come, the horticulturist by saving good "unit characters," in apples, for example, and by discarding the bad or useless, will be able to produce for any particular demand of the apple trade just the apple needed — the apple for the North as well as the apple for the South — and each a disease-resisting variety. Winter may then still rule in the North, but it will rule less harshly, and the Northwest will not only be great cereal-producing region, but a great fruit country — and a great stock-raising district, as well, for Professor Hansen's fourth contribution to the agricultural industries of America is a hardy forage obtained by exploration.

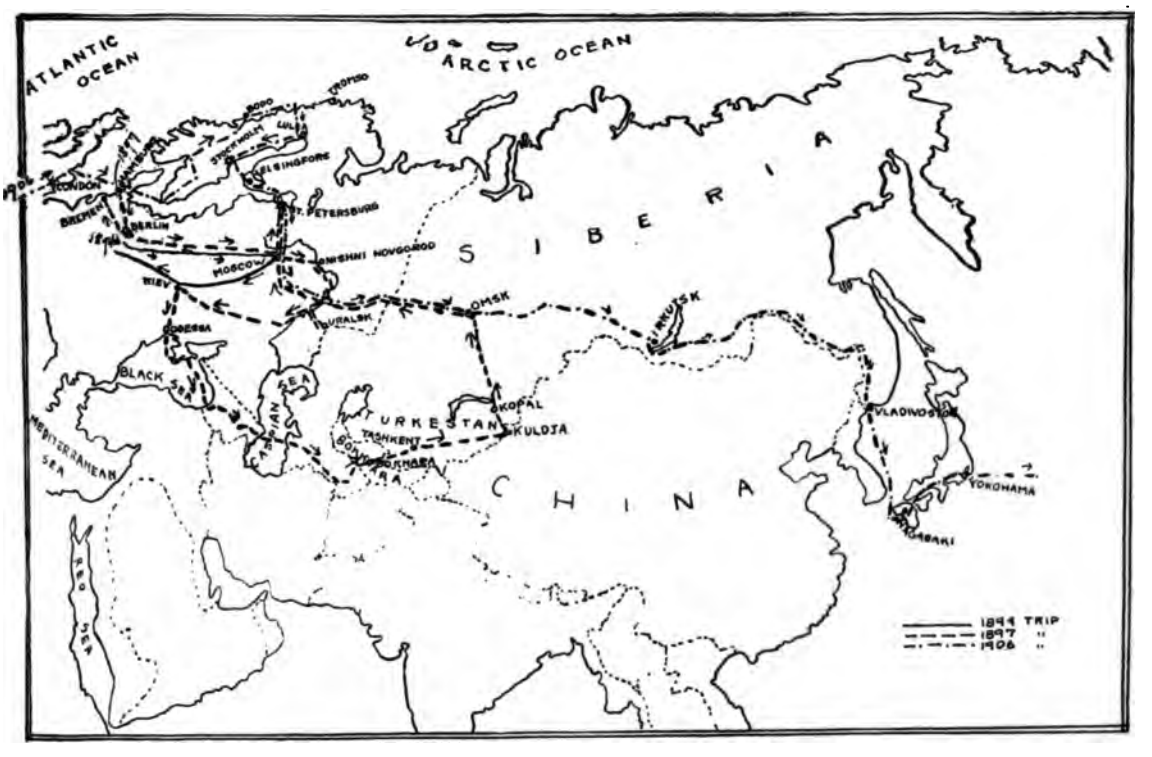
(III) TRAILING HARDY ALFALFA

In 1897, when Professor Hansen had just advanced the preliminary work of his campaign for the occupation of the North by the small fruits to a promising point, Secretary Wilson, of the National Department of Agriculture, began to put into execution a plan to explore the four corners of the earth for plants and animals adapted to the needs of the various sections of the United States. Being from the Northwest himself, he naturally took note of the needs of that district first, and he called upon Professor Hansen to go to Eastern Europe and Western and Central Asia in quest of drouth-resisting and cold-resisting plants. He gave the professor a free hand. He knew he could trust him to explore wisely and well and to bring back what would be worth while. Much of the wild region which the plant explorer was to traverse — the heart of Asia — had been explored but little by travelers and the professor knew he was going on no midsummer's picnic.

But, as he himself says, "possible hardships were forgotten in the eager quest." He knew not what aids for his Western fruit campaign he might find in far-off Asia.

Landing at Hamburg, he hastened to St. Petersburg, and thence southeastward to Nijni Novgorod, the scene of Russia's great annual fair, to which are carried the agricultural and manufactured products of both Russia and Asia — the very place to look for new material. Following down the Volga some distance, he turned eastward to the Ural Mountains, nature's battlements between Europe and Asia, finding on the way farms worked by hardy camels imported from the East. Then he turned westward again and crossed the great plain of south-central Russia to Kief. From Kief he went to Odessa, on the Black Sea, and thence by way of the Crimea, to Transcaucasia, "the Land of Noah's Ark," that storm-centre of contact between Europe and Asia. Crossing the Caspian Sea, he plunged into the land of the Turkoman. By this time, though hampered by an interpreter, he had developed the art of agricultural inquiry to a high degree. Almost every man or every group of men that he met was subjected to an agricultural catechism. It was not long before the professor was hot on a trail which he knew was likely to prove of the utmost significance.

This was a trail of a hardy alfalfa. All whom the professor met, army officers particularly, were closely questioned as to this forage. Horses even were "approached on the subject," and the provender they were eating in the market-places and at post-road stations was examined. And still onward across the Oxus (now the Amu Daria) River led the trail, the same that was followed by Alexander the Great more than a score of centuries ago. On alfalfa, the explorer found, central Asiatic civilization had existed for centuries, and what would sustain a semi-civilization in the East he knew would be an immensely valuable adjunct to the products of a fully civilized people in the West. The Northern African alfalfa, carried by the Spanish into South America three centuries ago and thence northward into California, had been shown again and again to be unfit for the prairies of the Northwest. It would freeze out in severe



PROFESSOR HANSEN'S THREE JOURNEYS IN SEARCH OF HARDY ALFALFA

The solid black line shows the first; the line of dashes shows the second; and the line of dots and dashes the third

winters with many millions as the aggregate loss. But here was a chance that a thoroughly hardy alfalfa might be found — a variety inured to drouth and cold through thousands of years of natural methods of cross-breeding. So the professor followed on across the land of the half-civilized Turkoman, through Bokhara, into Turkestan and to its capital Tashkent, where he found an alfalfa bazaar which bore the marks of great age. And still the signs pointed northward and eastward; without a thought of turning back, he pressed on, only stopping now and then for needed rest or to question some Turkestan plowman with camels hitched to crude implements centuries behind the times, as viewed by Western standards.

A THOUSAND MILES IN A TARANTASS

The journey was made in a tarantass, a four-wheeler with no springs, the bed being swung on long wooden poles, making a bone-racking vehicle somewhat resembling in appearance a modern buckboard. It was anything but comfortable as a conveyance for a 1,300-mile jaunt, but it was the best to be had for the purpose, and then there was the alfalfa to lure the traveler on. Following for hundreds of miles along the Tian-Shan range of mountains between Turkestan and China, Professor Hansen finally crossed the range into China, bringing up at the ancient city of Kuldja, in the province of Ili. He had traced the blue-flowered alfalfa to the very doors of Chinese temples in the heart of Asia. He was a thousand miles from a railroad, and had gone for months without letters from home, and he was in a land where the speech was utterly unknown to him — at least three removes as things stood from anything he could understand. In order to carry on his inquiries, he had to have three interpreters — one to translate Chinese into Tartar, another to make Tartar over into Russian, and a third to reduce Russian to German, with which he was familiar. "Yes, alfalfa grew farther to the northward — at Kopal," he was told. Back across the rugged Tian-Shan range he hurried. Winter was coming on, and there was no time to be lost. So he kept his post-horses moving.

At Kopal he did find alfalfa. It grew out on the wide steppes, where the Kirghiz Tartars pitched their strange camps, amid a sparse vegetation. But there, 45 degrees and 10 minutes north latitude, and 79 degrees east longitude, winter, that foe against which Professor Hansen had allied himself with the vegetable kingdom, swooped down on him in a vicious attack; and it seemed for a time that the attack away off there in Asia would defeat temporarily, at least, the cause of the plant kingdom in North-Central America by causing the premature death of the man. But winter reckoned not of his endurance and determined purpose. He had traveled 1,300 miles by wagon when snow put an end to his search for seeds and he decided not to go back over his wagon route, but to take sledges and push on almost due northward 700 miles to Omsk, on the Trans-Siberian Railroad. It was a hazardous thing to do, as the event proved, almost costing the professor his life as the price of having traced alfalfa to a latitude more northern than that of the capital of Minnesota and almost as far east of Greenwich as South Dakota is west. He had scarcely set out on his 700-mile sledge-ride before a violent blizzard swept down upon him out of the cruel North, and his Tartar drivers got lost on the treacherous steppes. Night thickened and there was nothing to do but to spend the hours until morning "out in the cold." And it was cold! A marrow-piercing wind cold enough to freeze mercury, with several degrees to spare, blew out of the North. Two men in another caravan in the same predicament perished. A reindeer suit in one piece from hood to knees and fur boots from toes to knees were doubtless all that saved the plant-explorer. When morning broke the storm subsided a little, and the little company found a post-house at Sergiopol, with shelter and warm, if not over-appetizing food. Pneumonia threatened the professor and compelled him to lie at the little military hospital at Sergiopol for a week. Then, impatient of further delay, he pushed on. But the sting of exposure had gone deeper than he had supposed, and before he had gone far he was again compelled to halt — this time at Semipalatinsk, where he made the intimate acquaintance of a poultice of lard and turpentine which showed the strength of its affection by blistering his chest. Then, after a terrific drive of three days and nights, without a stop except to change horses, he reached Omsk. He hastened by train to Bremen, by way of Moscow, and there took ship for home.

The net result of this trip was, first of all, the tracing of alfalfa to a latitude much more

northern than any in which Americans had known it to grow, then the shipment of five carloads of seeds and plants of many kinds to the Department of Agriculture at Washington, including the first importation of Turkestan alfalfa into this country.

The journey, in the estimation of the professor, paid, and paid abundantly, but that the northern limit of the alfalfa belt in Asia had been reached was by no means certain. Indeed, there was convincing evidence that that limit had not been found, for near Kopal an army officer had said that he had seen the plant at Zaisansk, a considerable distance northeastward of Kopal. The professor was anxious to go back and take up the broken trail. Who could tell but that he might be able to find the great forage plant, hardened by natural processes through thousands of years, in far northern regions, justifying the hope that the whole great central plain of North America, from Nebraska to Hudson Bay, could be made an alfalfa-bearing region? But wars and rumors of wars served to postpone the proposed second trip for nearly a decade.

THE THIRD TRIP ACROSS ASIA

Then one day came the announcement that he was again to take up that trail, and it came dramatically enough. At the dedication of the South Dakota State Fair at Huron, in 1905, Secretary Wilson made the chief address, and in the course of that address, without warning to Professor Hansen, who was sitting near, he said that the alfalfa explorations were to be resumed, and that the professor was to go again to Asia.

The troubles in Russia were at a high heat, and they extended over into Siberia. To go into Siberia, therefore, meant no inconsiderable risk. But the explorer did not temporize. He would go as far as he could — until some insurmountable obstacle put an end to progress. He at once crossed to Helsingfors. In the harbor there he saw battleships stripped for action. The outlook was not promising, but he went on, and despite evil omens on every hand he reached Omsk in safety.

Without going southward to Kopal, he began his quest for alfalfa along the Trans-Siberian railroad. Receiving encouragement, he took to the open steppes to demand of Nature her secret. The season was already far advanced. Snow lay upon the ground, and there was no time to waste. Then, one afternoon, out on the bleak plains, the man made his great discovery. He found, even in that high altitude, a wild alfalfa. It was not the blue-flowered alfalfa of Turkestan, but a yellow-flowered variety. Subsequent investigation was the means of bringing a "wonderful new fact to light." As Professor Hansen tells it, it was this:

"Where the blue-flowered alfalfa stops, three yellow-flowered species are found, extending from one thousand to two thousand miles northward, and clear across Siberia, approximately between parallels fifty and sixty-four north latitude. As these species grow freely in dry districts, they point to the extension of the alfalfa belt on this continent from Nebraska northward as far as men will care to farm—even to the Hudson Bay district."

The moment of the discovery of the first yellow-flowered alfalfa out on the wind-swept Siberian steppes, after nine years of waiting, was one of intense feeling and suppressed excitement for the explorer. A more demonstrative man would have thrown his hat in the air and spent his energies in shouting. Professor Hansen, on the contrary, set to work gathering all the plants that he could find, and he put his driver at like work. All the seed found then and afterward as he moved eastward was from wild plants. The Siberians had used the plant for hay for centuries, but with immense areas of wild land on which to draw had done nothing toward its cultivation. Recently, however, in places they have been encouraging Nature to give a larger supply.

At Irkutsk Professor Hansen found a load of the hay in market, and supposed, of course, that he would be able to buy plenty of seed. Not a seed could he get, though, and he went back to the owners of the hay, Mongolian Buriats, bought their load, and set a group of market idlers at picking out the seed by hand. The little coin of the realm, of which the professor always carried a supply, proved a sufficient "discourager of hesitancy."

But the finding of the plant did not end the discoveries relating to alfalfa. Inquiry showed that the yellow-flowered and the blue-flowered alfalfa belts overlapped, and that on the overlaps grew natural hybrids of the two, suggesting immense possibilities in artificial culture in America to get just the kind of alfalfa suited to any given district.

None of the seed derived from the original supplies brought back after the first discoveries

by way of Japan, has yet been distributed. Experiment stations, under the direction of the Government Bureau of Agriculture, are making extensive tests and, until these have been thoroughly sifted, no seed will be given to the public. Results obtained at Brookings and elsewhere, however, give promise that when the Government is ready to make announcements they will be of a most satisfactory sort, and mean the pushing of the extra-profitable farming belt much farther northward. Professor Hansen does not say this, but it is plain to be seen that he is not disappointed with the results obtained, and from that fact the large inference is natural and easy.

This man from South Dakota, then, has evolved a law of plant hardiness that can hardly fail to give a new direction and success to the breeding of hardy plants, and to hasten by many a year the complete agricultural conquest of the Great American Desert, even to much colder northern limits; he has planned a campaign of the utmost economic importance to the United States; he has put his law and his campaign plan to practical tests, inventing new fruits of finest quality and improving old native fruits, to a certain increase of the wealth of the Northwest and of the nation; at the risk of his life and at great hardship he has explored the semi-civilized portions of Asia and brought back hardy seeds and plants that promise to be worth millions to America's rapidly growing population. And yet at the age of forty-two his work is only just begun. He is, then, one of the forces to be reckoned with in forecasting the future of the Northwest.

Manifestly he is a thinker. He seeks the underlying philosophy of things, but is not afraid to be an iconoclast of ancient traditions when they do not seem to fit the facts as he finds them. He believes that the horticulturist with the truest philosophy as to Nature's methods, and the genius to apply that philosophy, will get the richest prizes; though, he says, as of old, the empirical, haphazard horticulturist will, of course, now and then get a "plum." In the long run, however, he believes the longest philosophical pole will literally knock down the most and the best fruit. Because of this attitude he scans with great eagerness reports of the work of every other man in the same general field. There is not an atom of jealousy in the man. He takes the utmost pleasure in the success of other men. He gives to Mr. Luther Burbank the highest credit for the work that he has done in improving fruits and flowers and classes him as "the master of us all." He takes the great lessons that Dr. Hugo de Vries of Belgium has recently taught in his theory of mutation, and summarizes them by saying that "evolution is not a snail but a kangaroo," proceeding by leaps instead of creeping, and these lessons he adopts with extreme gratitude as of inestimable value in his own work.

While he is a thinker, he is also a man of quick decision and prompt action. He has gone through a patch of 25,000 sand-cherry seedlings in a day and a half, choosing out the good from the bad, and leaving only the best — the very best — for propagation or for hand-fertilizing operations. That he is self-reliant and courageous as well as intelligent is shown by his soul-and-body-trying trips through Asia. Secretary Wilson once said of him: "Hansen is a man who does things. He is an intelligent, intrepid fellow, full of resources, and nothing stops him. When he sees anything of value he knows it, and when he goes after a thing he gets it."

Again, he is a man of philanthropic, reverent, and patient spirit. When he returned from his last Asiatic trip he gave a chapel talk at the South Dakota Agricultural College, in which he said with simple and modest directness, such as is characteristic of him: "I believe I was doing the Lord's work." Without patience and persistence he could not possibly succeed in the work he is doing. As to his generous nature, he has honor in his own country. A South Dakota weekly has said of him: "A man, who, through all his waking hours, has but one thought uppermost in his mind — the benefiting of his fellow men — is something more than an ordinary man, and is justly entitled to all the praise that has been given him by his superior Government official, Secretary Wilson." His work — and Secretary Wilson says that "he has done more important original work in horticulture than any man out West except Burbank" — is all done without thought of pecuniary reward. Neither he nor the school with which he is connected makes any money out of his discoveries. Once a discovery is shown to be worth something, it is practically given to the people to make what they can of it.

OUR DAWNING WATERWAY ERA

A RELIEF FOR CONGESTED TRAFFIC — THE WORK OF THE INLAND WATERWAYS COMMISSION FOR THE CONTROL AND USE OF ALL THE RIVERS OF THE COUNTRY IN ONE GREAT COÖRDINATED SYSTEM

BY

W J McGEE

SECRETARY OF THE UNITED STATES INLAND WATERWAYS COMMISSION

IN EXTENT and distribution of navigable rivers and lakes, mainland United States is better endowed by Nature than any other country on the globe, save Brazil; and in the close relation of the rivers to productive regions and industrial centres, this country stands without a rival. Yet, despite the rich endowment and rapid development which have placed the United States in the lead of the world's nations, the rivers are less used than those of any other civilized country. Such is the paradox of American transportation; and it is worse than paradoxical in view of the fact that, through neglect of the rivers, transportation capacity has fallen so far short of production that commerce is impeded and national progress retarded.

THE INADEQUACY OF OUR RAILROADS

During our effective railroad era of hardly more than half a century, population and industries were increased and diffused as never before in history; to the direct and indirect influence of the American railroad, it is safe to credit a large share of our population and our national wealth — for without it the population and wealth could not have come up. Nor is it a reproach to the railroads that the country has outgrown its capacity, any more than it is a reproach to the horse and carriage that the country outgrew the Conestoga wagon sixty years ago; it only means that our distances are so magnificent and our productions so opulent as to require the coöperation of all practicable transportation agencies. We have 222,500 miles of steam railroads worth (with collateral property) some $18,000,000,000, or about one-sixth of our national wealth; during 1906 they transported 1,631,374,219 tons of freight, and earned $2,325,765,167 — i. e., over a quarter of the value of our production during the same year. We have, also, 26,200 miles of rivers and some 2,800 miles of canals navigated in 1904, with transportation facilities of so little value as to be negligible in statistical summaries; and although the cost of water transportation averages but a quarter of that of rail carriage, during 1904 they moved but 127,000,000 and 5,000,000 tons of freight respectively — i. e., despite the economy of water-traffic less than one-eighth of our freight lines are water lines and less than one-twelfth of our freight is carried on rivers and canals. Meantime production and commerce increase in a geometric ratio, while further railroad extension proceeds but slowly; throughout our interior, production doubled in the decade from 1895 to 1905, while railroad capacity increased by only a small fraction — and competent railroad authorities estimate that the cost of bringing railroad facilities up to the present demands would reach $5,500,000,000 to $8,000,000,000, or an amount far exceeding our aggregate circulating currency.

The situation is simple — and it affects every part of the country. We pay too much for the carriage of our commodities, and too small a share of the selling-price goes to producers. And it is increasingly difficult to deliver products in the seaports at a price permitting profitable foreign commerce, and so maintaining our balance of trade: the country is simply too big and too productive for a healthy interchange between producing and shipping-centres — unless transportation can be quickened and cheapened. Nor is the situation a local or temporary phase, much less a mere academic figment; it reaches every section in yearly increasing stress, and is an actual factor in the daily life of the eighty millions in our forty-eight states and territories. The citizens of the Pacific States were the first to stir, since they saw settlement checked and production impeded; the twenty-odd interior

states drained in whole or part by the Mississippi, with their forty million people, soon followed and made their influence felt; then the thirty millions of the sixteen Atlantic States joined in the movement—and the people have arisen in mass-meetings and conventions, as never before over any peaceful issue, to throw off the tyranny of transportation. For the first time in our history the Executives of our commonwealths and of the nation are meeting with one another and with bodies of citizens in a common effort; for the first time, too, the leading railroad interests are enlisted in the movement for improved waterways and enlarged water-traffic.

THE INLAND WATERWAYS COMMISSION CREATED

In response to the demand of the people, the President, in March last, created the Inland Waterways Commission; and in October he, with a score of state Governors, participated with the Commission in an inspection-trip on the Mississippi which awakened such popular enthusiasm that it became a pageant. A result was an agreement on a conference of Executives; and for the first time in history — for, as the issue is unprecedented, so are its consequences — the Governors of the states and territories will convene in the White House on May 13-15th next to confer with each other and the President on their respective responsibilities and duties connected not only with traffic but with the resources on which traffic depends.

The Commissioners appointed on March 14th assembled and began inquiries toward the end of April. In May they made an inspection trip down the Mississippi from St. Louis to the Passes, observing high-water conditions. During the summer they continued inquiries separately or in groups; two or three, or sometimes four, joining in examination of the headwaters of the Missouri, the valleys of the Columbia, the Snake, Puget Sound, and the great Californian interior — valleys so fertile that grains and fruits spring forth as if by magic, overwhelming railroads and water-craft by their very abundance. In September the Commission toured the Great Lakes and studied the world's greatest object lesson in water-traffic and terminals; then they inspected the Mississippi at the low-water stage from St. Paul to Memphis; and still later they made a similar study, from Kansas City to its mouth, of the muddy Missouri — that 2,200-mile artery which opened the granaries and mines of the old Northwest, and then fell into slovenly disuse.

THE NOTABLE TRIP ON THE MISSISSIPPI

The trips were devoted to hard grubbing and were prosaic, as such trips usually are — except the inspection of the Mississippi from Keokuk to Memphis, in which the President participated. That proved the most striking episode in the history of the river, the most impressive demonstration any President ever saw. Practically all the water-craft of the Mississippi and Ohio gathered as an escort. Despite a daily shower, people poured from homes and shops and the back towns were literally emptied, so that in each city — Keokuk, Quincy, Hannibal, Alton, St. Louis, St. Genevieve, Chester, Cape Girardeau, Cairo, Memphis, and the rest — more spectators stood out to greet the President than the entire resident population. Flags and bunting stretched for miles; train schedules were abandoned to specials and excursions; day and night the steam whistles of factories, locomotives, and floating craft, with the sirens of excursion boats, bellowed and shrieked, while artillery roared and fireworks rattled. The ovation ended only after the President's address at Memphis before the Lakes-to-Gulf Waterway Association, which had led in the petitions for the appointment of a commission. The enthusiastic outburst was, of course, due in part to the mere passage of a popular President through a populous section; yet its unexampled exuberance grew out of the feeling that the visit presaged delivery from the bondage of congested commerce.

The best way to abate an evil is to find and remove its cause; and the first purpose of the inspections was to ascertain why the inland waterways are so little used; the second, to determine how they may be brought into effective use. At least partial answers were found.

HOW RAILROADS SUPPLANTED THE WATERWAYS

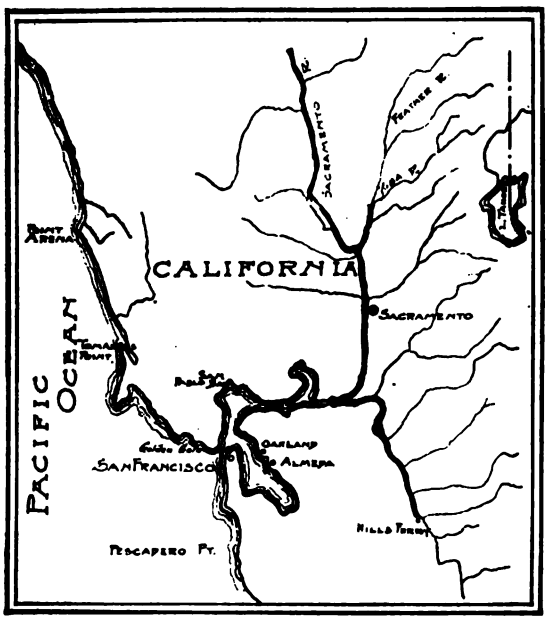
Our river and canal traffic declined largely by reason of railroad competition. At the outset the railroad activity was directed toward the development of speedy communication between productive zones or districts, and the aggregate production was limited; and the railroads with their convenient terminals gave the more satisfactory service, and hence held

the advantage. As settlement covered the intervening areas and production increased, the competition became inimical and transportation companies resorted to discriminating tariffs, secret rebates, purchase or control of canals and vessels, acquisition of water fronts and terminals, adverse transfer regulations, etc.— and the boats were driven out of business. The cases are too many for catalogue; suffice it merely for illustration that on the Mississippi there is not a river town from St. Paul to New Orleans (save "Natchez on the Hill") in which the water fronts are not mainly or wholly controlled by railroad interests, and that the Morris, Delaware and Raritan, and Cheapeake and Ohio canals are either owned or controlled by the same interests. The throttling of river traffic was natural and easy; it was little opposed, and seldom raised questions of equity

THE WASTED WATER RESOURCES OF THE UNITED STATES

Although the cost of water transportation is only one-quarter that of rail, the railroads have throttled water competition so that less than one-twelfth of the freight is carried on the waterways. The Inland Waterways Commisson is preparing a plan to coördinate all the water lines and bring them, in harmony with the railways, into use again.

— yet it was effective. Naturally other factors entered. Conditions of labor and wages changed from the time in which the sumptuously equipped Mississippi packets were independent of terminals because of slave roustabouts, and the Delaware and North River freighters were successful by reason of cheap stevedores; yet these were but incidents of the strife for survival of the better capitalized. The physical law of communicating lines (the mathematical law of combination) was another factor; two communities may be connected by one line, while three communities require three lines, and four, six lines; five need ten lines, six fifteen lines, and twelve sixty-six lines; if the lines



THE CALIFORNIA RIVER SYSTEM
Which taps the two great valleys of the state

were not combined, the county seats of a state of a hundred counties would require 4,950 lines of communication to connect them, while the thousand towns of a section of the country would require 49,950 lines — so that a reason for the breaking down of communication and carriage in a growing country lies in an inexorable law.

THE NEGLECT OF THE GOVERNMENT

The river men recognize another factor which most of them deem paramount, i e., lack of confidence. This feeling reveals widespread distrust of Governmental policy, and compels the realization that for a half century the attitude of state and Federal governments toward our waterways has been negative, if not actively repressive. Influenced by the Constitutional provision concerning interstate commerce, many states have withheld all work on rivers, some statesmen holding that the rivers belong to the nation; while the Federal Government has never charged a Cabinet Officer or any branch of the Government with the responsibility of administering river affairs, developing the uses of the rivers, or promoting or even protecting river traffic. The river men are right; the use of the rivers has been everybody's business — and naturally became nobody's business. True, a brilliant professional branch of the War Department — the corps of engineers — has constructed in admirable fashion all works specifically authorized by the Congress; but the engineers were prohibited by custom and even by law from initiating or recommending projects required by the business interests of communities or states. True, a legislative agency — the House Rivers and Harbors Committee — has been vested with a power of initiative; yet for years the recommendations of the Committee were regarded askance, and when the reproach was removed under the leadership of Representative Burton, the demands were so overwhelming as to compel a petty hand-to-hand programme of scaling down and turning down projects to the extent of 75 to more than 90 per cent. rather than developing any comprehensive and progressive policy. The neglect of our rivers has led to a national burden; the responsibility rests largely on inimical traffic interests, yet chiefly on an apathetic policy — or absence of policy — on the parts of states and nation. In the light of the causes, the remedy becomes obvious; and it must be more than the mere putting of the rivers in navigable condition.

It is the lesson of our Great Lakes that successful navigation depends no more on channels and vessels than on terminals; while our history and that of several European countries proves that water carriage depends for its success on relations with railways or other feeders and distributors. Accordingly, the first requisite for successful development of water traffic is commercial control, i. e., adjustment between water facilities and overland facilities, including regulation of rates, arrangement of terminals, etc.; such adjustment

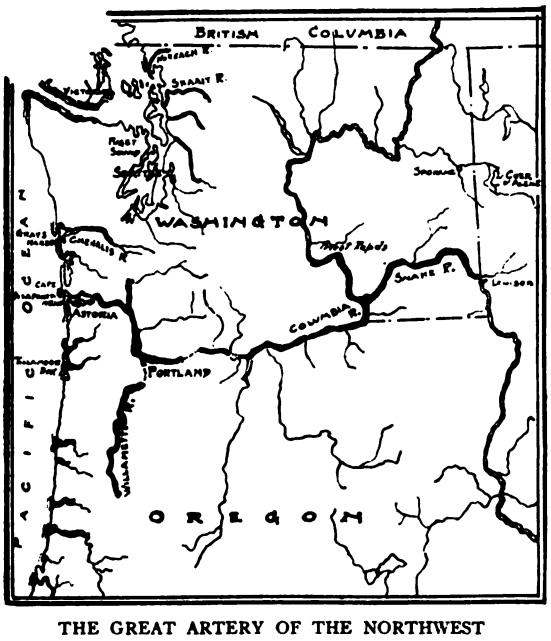
to be effected either through business interests or under state and National provisions.

TO CONTROL THE RIVERS

The second requisite is physical control of the running waters — a task more complex and difficult than any thus far undertaken in any country. Hitherto men have been content to let their rivers run wild, ranging from flood to low water as they would; smaller streams have been partly controlled for power or for irrigation, and in a few cases for municipal or domestic supply; yet in general the 136,000,000 square miles of water 1 foot deep annually distilled from the clouds on our land runneth where it listeth, free as the breezes that waft the vapor from ocean and gulf. Jointly with the air and enough earth to stand on, this is our richest resource. It is a common necessity of life; it gives value to our soil; it forms six-sevenths of our bodies, and seven-eighths of our sustenance; and it is the annual flow, which would cover nearly 9,200,000 square miles one foot deep, that furnishes our natural ways of commerce in river and lake. In a state of nature, the falling and running water is an agency of earth-making; yet it tends during the ages toward producing forests and other vegetal cover, mulch, and friable soil whereby the run-off is retarded and the seepage (or ground-water) is stored in such manner as to equalize flow and render the waters clear. Under settlement and cultivation the sward is broken and the forest-mantle torn, so that the storm-waters gather in torrents, rob the soil of its richest elements, scour channels and accumulate detritus, and both build bars and raise floods in the lower reaches. This unwitting interference with the regimen of the rivers has helped to diminish their industrial use; at the same time, it indicates both the possibility and the means of complete physical control. In some cases reforestation, in some places storage reservoirs, in all cases flood-holding and soil-saving agriculture, and in all swifter streams restraint of flow for the development of head and production of power — these are among the remedial devices which promise steadily progressing control of the running waters until the rivers are harnessed and every cubic foot of rainfall will be subject to human control and turned to human benefit. The end will not be reached in a day, not fully for generations; yet each step will not only be beneficial — indeed, profitable — in itself, but will make the later steps easier.

THE COÖRDINATION OF ALL PLANS

The keynote of modern waterway improvement is coördination — the treatment of each river system, from its source in the forest to its mouth at the coast, as a single unit, and in such manner as to derive every benefit and diminish every evil from the running water. Under such a plan no lock nor levee, no dam nor revetment, will be constructed without reference to the clarification and purification of the water, the control of floods, the development of power; no storage nor drainage system will be taken up without reference to



THE GREAT ARTERY OF THE NORTHWEST
The Columbia, which can be used to carry freight from Idaho to the sea

the improvement of navigation and other uses of the waters; and dams and other local works will be regulated with the view of securing not only local but general benefits.

Considered with respect to improvement, the waterways of mainland United States fall into four geographic systems, separated by natural boundaries. The most important of these is the Interior-Atlantic system, comprising the Mississippi Valley, the Gulf slope, the Atlantic watershed, and the Great Lakes with their watershed. The projects for waterway improvement here (of which each has long been advocated, though all have seldom been considered together) include the Lakes-

to-Gulf deep waterway; the Atlantic deeper waterway and sheltered passage from Boston to Beaufort and on to Florida; the Eastern Gulf inner passage from the Mississippi through the lakes and sounds and thence across the isthmus of Florida to the Atlantic waters; the Western Gulf inner passage from the Mississippi at Donaldsonville through bayous and sounds to the mouth of the Rio Grande; the improvement of the Missouri to Benton and beyond; the deepening and control of the upper Mississippi, with the canalizing of the Minnesota and Red River of the North in such manner as to give easy water connection with Lake Winnipeg and Hudson Bay; the deepening and local canalizing of the leading affluents of the Mississippi, Gulf, Great Lakes, and Atlantic; and the completion of canal projects designed to connect the waters of the interior with the Atlantic. Hitherto, the projects have been largely local and independent; demands have been for 14 feet in the lower Mississippi, 9 feet in the Ohio, 6 feet in the upper Mississippi, 7 feet in Hennepin Canal, 12 feet in the Erie, and various other depths in the Missouri, the Arkansas, the Tennessee, the Cumberland, the Mobile, and the Hudson; yet the need made manifest by a study of the waterways of the Interior-Atlantic system is for one or two standard depths adapted to a standardized boat and barge traffic — so that, e. g., barges loaded at Benton might pass direct to Brownsville or to Boston with some choice of routes, or might shift cargo at New Orleans, according to economy and convenience. Second in importance is the Columbia-Puget system, in which the rivers are admirably adapted to navigation so soon as the cascades and rapids are brought under control by lateral canals and locks; and the traffic facilities would lead to the doubling of population and production within a decade — for to-day some of the world's richest wheat fields and fruit lands lie dormant for lack of transportation. Here irrigation and power development are among the collaterals hardly less important than navigation — though the Chehalis Cut connecting the Columbia with the sounds and sheltered passages extending to Sitka and beyond add never so much to the commerce of the new Northwest. Particularly pressing are the needs of the California system, comprising the Sacramento, San Joaquin, and Feather, with the bays into which they fall; for hydraulic mining has choked the channels with débris and reckless deforestation has raised the floods, so that not only is commerce impeded the year round but the richest flats of the great valley are devastated during each freshet. In the Colorado system, comprising the valley of the Rio Colorado and the Great Basin, the chief needs are for irrigation and power; yet here, as throughout the western three-fifths of the United States, judiciously designed works erected for these purposes will render the waters navigable. In each system the demands are large; the local projects presented biennially to the Rivers and Harbors Committee aggregate $300,000,000, to $500,000,000; and the Rivers and Harbors Congress, headed by Representative Ransdell, urges the appropriation of $50,000,000 annually for ten years to meet the more pressing projects.

THE WORKS TO BE SELF-SUPPORTING

Under a coördinated plan with provision for combining all local projects on a self-supporting basis, the burden on the Federal Treasury might be greatly reduced; for while the waters should be forever free to navigation, the collateral benefits might be made to defray the cost of surveys and engineering work. With a working capital no greater than that estimated by Ransdell and others, the value of the power alone would pay for all of the waterway improvements contemplated, including the cost of its own development, within twenty or thirty years; our 40,000,000,000,000 cubic feet of running water has an average head of some 2,500 feet, and a hundredth of it would yield 3,000,000 horse-power, worth $60,000,000 per year — and modern electric appliances would carry the power to mill and factory and train. Nor should the great value of purified water-supply be overlooked, nor the annual saving of a thousand million tons of richest soil-matter, even though direct returns be not readily arranged; for they would mean the saving of life and property, the increase of production and population, and the enrichment of the country.

In the modern view, the running waters are an asset of the people, never granted to any authority, and not properly to be alienated. In so far as interstate commerce is concerned, the resources can be administered only by the Federal Government; but since other rights are involved, it is the modern policy to

distribute benefits and costs by coöperation with states, municipalities, communities, corporations, and individuals, in such manner as to secure the greatest good to the greatest number of people. The mechanism for distribution remains to be framed in detail; it is still under deliberation by statesmen, and will receive consideration during the great interstate conference of Governors in May; yet there is little doubt that the minutiæ will be worked out in such manner as to meet the national need for improved transportation through waterway development.

THE HISTORY OF THE MOVEMENT

The idea of developing our waterways for purposes of interstate commerce is not new; it originated with Washington, and led to the creation of a Waterway Commission in 1785 and the framing of the American Constitution two years later; it was urged by Gallatin an even century ago in a plan ambitious as that of any later date; it gave us most of our canals — and the current impulse of the people merely follows the century-old plans. The modern policy adds only collateral ideas, that have come up through the natural growth and orderly development of a great country: Its essentials are: (1) recognition of the running waters as an inalienable asset of the people; (2) coördination of all parts and the several uses of the streams; (3) regulation of the relations between water-carriage and other means of transportation; (4) distribution of benefits, in such wise that the people of each part of the country will enjoy all natural advantages pertaining to their waters; and (5) ultimate control of our water-supply in such manner that none shall be wasted and all shall be put to its best use for the benefit of mankind and the welfare of the country. And the old idea fortified by the new policy can hardly fail to open another stage in American development—a Waterway Era.

THE DERBY OF THE AIR

HOW MR. FARMAN WON THE BLUE RIBBON OF AERONAUTICS — RECENT ACHIEVEMENTS OF OTHER INTREPID INVENTORS — NEW MOTORS FOR AIR-SHIPS — OUTLOOK FOR THE FUTURE

BY

RUPERT JOHNSTONE

BEFORE September last, Mr. Henry Farman was a comparatively unknown man in the world of aeronautics. He had evolved a model which he reasoned should be capable of lifting him from the ground, of soaring and descending again at will. In collaboration with Messrs. Voisin, the machine was constructed and the first trial carried out on the Issy parade ground — an ideal situation for such experiments, since the country is perfectly flat and open — at Billancourt, near Paris, on September 30th last. The initial efforts were of a tentative nature, only short flights or jumps of from thirty to eighty yards being attempted, close to the ground and in a straight line. These were so highly successful that more ambitious flights were undertaken, since the stability of the machine had been assured, together with efficient lifting and propelling power. The experiments were continued daily during October, the distances being successively increased up to some four hundred and forty yards.

WINNING THE FIRST CUP

Mr. Farman had produced a more efficient, more reliable, and fleeter aeroplane than any that had preceded it. Whereas Santos-Dumont secured the Archdeacon Challenge Cup with a speed of 25.8 miles per hour over his course of approximately 220 yards, the Farman machine exceeded this velocity and was entirely free from those eccentricities arising from loss of balance which characterized the Dumont machine, and which caused it to embark upon peculiar evolutions over which the designer had no control and which often placed him in a position of great jeopardy. The Farman aeroplane rose steadily and easily from the ground and, while the motor

was kept going, maintained an even straight course until the power was shut off, when it gently glided to the earth again. Here, indeed, was a machine heavier than the air, such as inventors had striven after for centuries, which answered as readily the commands of the aeronaut as if it were an ordinary wheeled vehicle running along the road. Under these circumstances, the inventor decided to attempt to eclipse Santos-Dumont's achievement, and the Aviation Committee of the Aero Club of France was notified accordingly; arrangements were completed, and the whole world awaited the result with anxious expectancy.

Upon the appointed day a vast crowd assembled upon the scene where the attempt was to be made. The fact that Farman had thrown down the gauntlet to the holder of the cup, Santos-Dumont, added a new zest to aeronautics, for it was the first occasion upon which such a challenge had been made. It was the Derby of the air — a struggle for the blue ribbon of human flight. The elements were favorable and, all formalities completed, the signal to start was given. Farman took his seat in the car. The motors were started, the 50-horse-power eight-cylinder Antoinette gave vent to a soft, rhythmic purring which grew in intensity as the control lever was advanced. Slowly the bicycle wheels upon which the aeroplane is mounted began to revolve and the outspread planes emitted a sibilant swish like that of a bird, as the pace increased. At the proper moment the forepart of the machine rose gracefully into the air to a height of about six feet, and without the slightest undulation or lateral dipping flew majestically onward with increasing speed in a straight line. Would Farman beat Dumont's record? That was the question upon the lips of the spectators as they followed the thrilling spectacle in silence. Still the machine kept on its course, and it appeared that if the aeronaut so desired he could keep in the air for hours, so smooth and steady was the progress of his machine. Presently, with a graceful dive, the machine glided downward, and with scarcely any vibration alighted on the ground. The pent-up excitement of the spectators broke loose and they cheered the plucky Farman to the echo as he disembarked from his craft. Excited officials ran hither and thither, comparing reports of the distance covered and the time occupied in the flight. The previous record had been beaten, but by how much? That was the burning question. The cheers were renewed when it was announced that Farman had secured the trophy with a flight of about eight hundred and forty-three yards at a speed of 33.7 miles per hour. The victor had not only covered more than three times the distance flown by the previous winner, but at an increased speed of 7.9 miles per hour.

WINNING THE BLUE RIBBON

So far, Farman had confined his efforts merely to flight in a straight line. His initial success in securing the Archdeacon Cup prompted him to aspire for new laurels. The first objective was the Deutsch-Archdeacon prize of $10,000 for a flight of one kilometre in a closed circuit. This was a far more difficult problem, since it evolved the evolution of a curve in the air. As, however, the machine had proved to be well under control, the next fortnight was devoted to carrying out such evolutions aloft as would be essential to secure the $10,000 award. Here again he met with striking success. In almost his first attempt, he well-nigh covered a complete circle, following up this performance by describing a double, or S, curve. The early efforts were brought to a conclusion by the machine's lack of a perfect balance. To a certain extent this development had been expected, but the inventor had observed the points where his design was in need of modification. The centre of gravity was too low, the cellular tail was somewhat too cumbersome and unwieldy, while the double-front steering plane was unsatisfactory. These minor alterations were soon made. A smaller cellular tail was made, the centre of gravity was raised, and a single-front steering plane was installed.

Success immediately attended the modifications, and, after a few preliminary spins, which satisfied the inventor that he could turn to the right or left whenever he desired, he prepared to carry out his great feat. On January 13th last, victory was secured. The crowd, whose curiosity had been whetted by Farman's continual success from short leaps to long flights, his winning of the Archdeacon Cup, and his present ambitious flight, followed his ascent from the starting point with excitement. From 843 yards to 1,100 yards was a huge stride within a few weeks, and the completion of a circle as well! It was a sight worth traveling

miles and hours to see. The crowd watched breathless while Farman, whizzing through the air, endeavored to swing his aeroplane round. A frantic cry went up. The huge bird answered the helm, and without the slightest dip. Would it hold on its course and continue to be brought round throughout the entire distance, or would it suddenly plunge to the ground and bury the inventor in a heap of débris? That was the crucial point. It held on, and at last alighted on the turf at the point from which it had started. The circular kilometre had at last been covered. Henry Farman, as he swung from his car, was seized by the excited spectators and warmly embraced. Not only had he carried off the French aerial blue ribbon, but he had achieved two great conquests within the space of three months, and incidentally had imparted a stronger stimulus to aviation than had ever been done before.

EXPERIMENTS OF THE EX-CHAMPION

It must not be thought, however, that Farman was the only would-be aviator in the field during the past year. Experimenters who had struggled with the problem for years had, despite repeated failures, continued their quest with dogged persistence. Foremost among these are M. Santos-Dumont and M. Blériot. The first-named, after winning the Archdeacon Cup, set his mind upon carrying off the Deutsch-Archdeacon prize. He evolved machine after machine when the "Bird of Prey" proved to be far from perfect. But disappointment appears to have followed him incessantly. Accident after accident, failure after failure, relieved by slight successes here and there, is his only record during 1907. He even reverted to his balloon-support principle, and with a view to surmounting his difficulties, a small cigar-shaped gas-bag was carried above the aeroplane proper for this purpose. Certain aeronautical scientists maintain that the true solution of human flight over illimitable distances rests with the correct combination of the balloon and the aeroplane, but the correct relation of one with the other has not yet been determined. It is certain that the inclusion of the gas-bag, no matter how small it may be, introduces an element of uncertainty and clumsiness into the apparatus. Stability may thus be insured, but it is at the forfeiture of dirigibility. Consequently the two camps — lighter than air, and heavier than air — still remain and maintain their respective theses as strenuously as ever, though the result of Farman's successes has alienated many advocates from the former *coterie*. The lighter-than-air enthusiasts support their contention, however, by pointing out that the greatest successes in human flight have been accomplished with dirigible balloons.

TRIALS WITH A MONOPLANE

M. Blériot's latest aeroplane, on the other hand, is practically a monoplane. The body is long and attenuated, rectangular in section, with a blunt nose, and terminating in a pair of horizontal planes, one disposed on either side of the body with a vertical rudder centrally placed between. The forward planes or wings, springing as it were from the shoulders of the body, are about seven feet six inches wide and the machine is carried upon the familiar bicycle-wheel support to secure the requisite impetus for soaring, and it is propelled by an 8-cylinder Antoinette engine developing fifty horse-power. Greater distances were attempted with equal success until at last, on December 6th, it achieved a notable performance, covering over sixteen hundred feet in a circle. These successes served as an excellent encouragement to an indefatigable experimenter, who, despite numerous defeats, had persistently adhered to his quest, and it appeared probable that Farman would have a rival in his challenge for the Deutsch-Archdeacon $10,000 prize. Unfortunately, however, a few days later, while flying at about three feet above the ground at great speed, the stretchers of one of the wings snapped suddenly. Equilibrium thus upset, the machine dropped to the ground like a winged bird and completely capsized. The spectators, among whom were Santos-Dumont, M. Archdeacon, and Madame Blériot, together with the inventor's assistants, rushed to the spot expecting to find the mangled remains of the aeronaut buried beneath the ruins of his machine, which weighed nearly half a ton. Strange to say, he was only slightly hurt, his injuries being confined to contusions. It was a lucky escape, yet when rescued the experimenter announced his determination to continue his investigations, though he will probably now forsake the monoplane type in favor of the cellular construction favored by Farman.

Owing to Farman's success, there is great activity at present in French aeronautical circles

and many new aspirants are in the field. One of the most novel of these is the gyroplane which borrows a little of the gyroscope idea. It has been evolved by the brothers Brequet and Professor Richet. The gyroplane comprises essentially a central body built of tubular steel, in which the motor, its accessories and the aeronaut's seat are mounted. From the body project four arms similarly made of tubular steel bound together by steel wire to secure the requisite rigidity. At the extremities of these arms are disposed four systems of turning planes, the arrangement being such that not only is a vertical lift imparted to the apparatus by their rotation, together with stability, but forward propulsion as well. The motor is of 45 horse-power, and the complete weight of the whole apparatus is 1,270 pounds. With this apparatus the inventors anticipate attaining a speed of approximately fourty-four miles per hour.

To Captain Ferber belongs the credit of building not only the largest, but also the most powerfully engined airship that has yet been designed in France. It is a somewhat strange-looking conception, comprising a tapered latticed girder body, having two large concave pointed wings at the head. The propelling power is supplied by a 16-cylinder engine developing 100 horse-power placed just behind the wings, and just aft of this is the aeronaut's seat. Complete, the apparatus weighs nearly half a ton. The lines of this design follow somewhat the dragon-fly in flight, with its attenuated long body and narrow wings.

UNITED STATES GOVERNMENT REQUISITIONS

American invention has produced the Chanute type of aeroplane, the Graham-Bell tetrahedral kite, the Wright Brothers machine, about which there is so much mystery, and one or two others which practical experiment has not yet succeeded in establishing. True, enterprise is being stimulated, especially by the Government, which, in view of the activity of the French, German, and English authorities, is seeking for a serviceable airship, either of the lighter or heavier than air type. The requisitions to be fulfilled in the case of the latter are rather severe, and will tax the ingenuity of the inventors to a supreme degree. In the first place, a speed of forty miles per hour is stipulated, and any machine attaining less than thirty-six miles per hour will be rejected. The machine must be so constructed as to permit of easy dismantling for transport purposes, while it must be reassembled at any desired point and placed in operating condition within one hour. It must be of sufficient capacity to carry two persons having a combined weight of 350 pounds, and carry fuel sufficient for 125 miles. Speed tests will be carried out over a set five-mile course with a flying start, and the aerodrome will have to fly both with and against the wind. Following this, an endurance test will have to be fulfilled, comprising a continuous flight in the air for the space of one hour, ultimately returning to the starting point and landing without incurring any injury, so that it might immediately reascend if required. During this sixty minutes' endurance trial the machine will be required to travel in all directions, performing various evolutions and at all times be absolutely stable and under complete control. In case of any sudden failure of the propelling machinery when aloft, a safety device is to be carried which will enable the aeroplane to come to the ground without inflicting any serious injury to itself or to the operators, and moreover, must be of such a design as to be capable of ascent in any country which may be encountered in actual military service without the need of any special preliminary preparations. The conditions to be fulfilled are unusually stringent, and under such circumstances it is not surprising that the response has been very meagre, only two bids being received. On the other hand, the stipulations concerning a dirigible balloon are more liberal, a speed of only twenty miles per hour being sought. These easier terms have produced a number of offers at prices ranging from $5,000 to $25,000.

EXPERIMENTS IN ENGLAND

In Great Britain but little has been lately accomplished. The trials with the Moore-Brabazon aeroplane are being awaited with great interest, since this marks the first serious attempt by an Englishman, since Maxim's experiments, with a machine built upon Chanute's long-accepted model. In Scotland a heavier-than-air machine is in course of construction under the surveillance of the War Office, though not at their expense, beyond the provision of expert labor drawn from the aeronautical department at Aldershot. Another important development is the application of mechanical power to the Cody kite. This

apparatus has proved highly efficient so far as concerns the lifting of a man to a reasonable height for reconnaissance purposes, and its behavior when equipped with a propelling motor in place of the towing pilot kites will be keenly watched.

THE LIGHT MOTOR

Side by side with the perfection of the aeroplane has followed another equally important development — the production of a light, high-powered gasoline motor eminently adapted to aeronautical requirements, but possible of application to other phases of industry. The needs of the one have created the other. There have been many prominent engineers, especially in France, who have been associated with this development, and who have accomplished excellent work, but the results of their enterprise were not brought into prominent notice until the flights of M. Santos-Dumont's "Bird of Prey" arrested public attention. His motor, of the new well-known Antoinette air-cooled type, weighed about five pounds per horse power, and indicated a remarkable advance in the construction of the light high-powered gasoline engine. That was some eighteen months ago, but since then even greater strides have been effected. Recently the Dufaux Brothers of Geneva, the well-known motor-car builders, have produced a 120-horse-power engine, at 1,500 revolutions per minute, of the water-cooled type especially for aeronautical work, the weight of which is but 187 pounds. It will yield one horse-power for every one-half pound of weight.

A NEW TYPE OF ENGINE

M. Esnault Pelterie, in the course of his aeronautical experiments, hit upon a new type of motor. He has seven cylinders disposed star-shape upon the upper half of the crank-case, and by exactly distributing the explosions he has eliminated the heavy fly-wheel, which greatly lessened the weight of the engine.

M. Santos-Dumont, in his latest flying-machine, is also utilizing a new type of engine of the air-cooled class. It is of the horizontal type with double opposed cylinders. The aeronaut has already subjected the engine to severe tests and has expressed himself as highly pleased with the results, there being a marked freedom from vibration owing to the perfect means adopted for balancing the working parts, while at the same time great power is secured. In this case, also, the fly-wheel is dispensed with, the aeroplane propeller, which is mounted upon the end of the crank-shaft, performing the same purpose. Being air-cooled, there is a great economy in weight, due to the dispensation of the gearing and pump which is requisite with a water-cooled system. The complete motor weighs 48.5 pounds, and as it develops twenty horse-power this gives a weight of practically two and four-tenths pounds per horse-power.

MR. FARMAN'S PLANS

And what of the future? Mr. Farman, having carried off the two greatest prizes available in France, has announced his intention of striving for one or more of the attractive awards awaiting a victory in England, the first being for a mile's straight flight for the *Daily Graphic* $5,000 trophy. Subsequently he will probably visit this country and make a bid for the Aero Club's $2,500 cup, and will also participate in a series of exhibition flights and competitions. Curiously enough, no attractive award beyond the above-mentioned cup has yet been offered in America that is comparable to the London to Manchester $50,000 purse.

Although Mr. Farman has for the moment called a halt in his experiments, he promises to return to the subject in a few weeks and continue his attempts, this time over greater distances. M. Santos-Dumont has also renounced his ambitious efforts. He is now contenting himself with the perfection of a small machine driven by a 5-horse-power motor which will enable one to fly a few feet above the ground. The aeroplane that he will thus produce for this purpose will be the smallest that has yet been attempted. He has taken up this kind of work because of the rapidly increasing demand in France on the part of amateurs for small machines.

THE COST OF FLYING-MACHINES

Messrs. Santos-Dumont and Farman have both expressed their opinion that flying is more exhilarating and interesting than motoring. Certainly in point of excitement aeroplaning would be difficult to beat. The only governing factor is in point of cost, upon which point but little definite information is forthcoming, since pioneer work is always unduly expensive. The following is, however, an

approximate estimate of the initial cost of a small machine:

Aeroplane complete with wheels, but without machinery	$1,000
Gasoline motor, 21 horse-power, complete	1,800
Screw and its installation	100
Installation of motor, etc.	60
	$2,960

It will thus be recognized that for some time to come flying will only be available to the privileged few. The smaller machine of five horse-power will, however, be approximately 50 per cent. cheaper, but there will be no appreciable decrease in the first cost until the demand for the propelling mechanism — the most expensive item — develops sufficiently to enable the manufacturers to standardize their parts and turn the engines out complete in unlimited numbers.

While the Farman aeroplane is to the perfect flying-machine what the Rocket is to the modern locomotive, it is certain that development will be much more rapid in consequence of its success. These inventors are still engaged on preliminary work, since experience has already demonstrated that aeronautical theory, no matter how conclusive it may appear, is sadly deficient when reduced to practice. No doubt there will follow an aeroplane bubble the same as that which attended the invention of the railway engine. Then, from the financial wreck that must inevitably ensue, the industry will rise again and enter upon a course of steady scientific development. Already the successes of Santos-Dumont, Farman, Zeppelin, and others have produced the usual crop of fantastic schemes for the inauguration of flying-machine services, emanating from the brains of the company promoter. Such adventurers will do as much to cripple and hamper the progress of the new industry as the numberless accidents to the intrepid who dare to plunge recklessly into the uncharted currents of aerial flight.

A GREAT DEMOCRATIC GOVERNOR

JOHN A. JOHNSON, OF MINNESOTA, A QUIET REFORMER WHO HAS "MADE GOOD" IN OFFICE

BY

WINTHROP B. CHAMBERLAIN

TO STAND well poised and unafraid in the very focus of publicity's searchlight is not easy even for a man who has been long accustomed to such a test. Governor Johnson of Minnesota, who four years ago was a humble country editor, has been neither frightened nor dazzled by the experience. His old hat still fits him perfectly, his old friends see no change in his sunny comradeship. Plain common sense, which has ever been his guardian angel, has not deserted him in this emergency. John Johnson has enough of the stolidity of the Swede to keep his heart from beating too wildly or the blood from mounting to his head too feverishly; he has enough of the practical readiness of the American to be master of his own destiny. In the chorus of admiration that has been swelling, as his story has come to be known, he has been able with unerring ear to distinguish the adulatory pæans of those who wanted to use him as a weapon of destruction against their enemies, from the songs of honest praise that came from sincere throats. This poise, with the common sense that lies behind and inspires it, is no surprise to Minnesotans, for it is one of the qualities in John Johnson that they know and love. But to those who do not know him, it may well be significant of the man.

The story of his career, one would say, ought to throw many strong sidelights on his character. And it does. It is not a long story. The element of chance enters into it with sufficient frequency to make it typically human; the ability to grasp the opportunity, and the capacity for development as that development was required, make it typically American.

HIS SWEDISH ANCESTRY

John Albert Johnson was born of Swedish parents forty-seven years ago. But as that first event took place near the little city of St. Peter, Minn., he is a native American.

More than that, he is the first native son of Minnesota to be elected her Governor. Gustaf Johnson and Caroline Hanson Haden were his parents, and both came from Sweden to Minnesota in the early 'fifties. They first met in America, however, and neither kept in touch with relatives on the other side. The Americanization of the Scandinavians in the Northwest carries with it naturally and frequently the gradual severing of all ties that bind to the old country. And so it happens, in this case as in so many others, that very little is known of the more remote ancestry of Governor Johnson. Both of his parents came, however, from that sturdy peasantry of Sweden which has furnished nearly all of the immigration from that country — a peasantry unexcelled in all Europe for intelligence and strength of character.

Gustaf Johnson, the father, was a blacksmith by trade, and a man who had been in the grip of an overmastering appetite for drink when he came to America. To this sinister fact is due the tragedy of John Johnson's youth — and the early growth of his character. Gustaf had lost most of his patrimony in the old country, and had determined to go where he might make a fresh start, far from the temptation of old associations and boon companions. It seems evident that he was naturally a man of force and intellect, for in his new home he did make his fresh start, he did master for the nonce the demon of appetite within him. And Caroline Haden wedded him in complete ignorance of that fatal lesion in his character.

John was the second son. Three or four years after his birth the family moved from the farm near St. Peter into the city itself. Those were pioneer days in Minnesota, when there were few railroads, or none, and when one reached St. Peter by team or by boat up the Mississippi and then up the Minnesota. The state had sent its best young men South in regiments, and those who stayed behind had had to fight the Indians. The bloody New Ulm massacre was near enough to St. Peter to bring the ghastly terror close to every home. The little city was safer, so far as the Indians were concerned, for the Johnson family, but it was not safer for Gustaf Johnson. The old enemy assailed the blacksmith, and he fell. Finally, a victim of alcoholic dementia, he ended his career in the county poorhouse.

This sordid tragedy would not be worth the telling, but for two things. The first is the fact that it was told in sober candor when John Johnson first ran for Governor, and when the opposition to him started the story that he had allowed his own father to live and die wretchedly in the poorhouse. Nothing but the truth could triumph over that accusation, and the truth proved a mighty argument for the election of the young candidate. The powerful appeal that the truth made to the voters was both sentimental and practical, for it showed how John Johnson at the age of thirteen had met the first great crisis in his life, had risen superior to difficulties that would have crushed a less courageous and self-reliant lad, and had assumed the headship of the family bravely and well. That is the second fact which justifies the repetition of the story here. Incidentally, too, there is thrown a flood of light on the character of a mother who could and did keep her family together under such circumstances, who could and did raise them to useful citizenship, who could and did make a home that produced a man like John Johnson.

AT WORK AT THIRTEEN

It was at thirteen that the lad, despite his mother's entreaties and her ambition to have him secure a thorough education, insisted on leaving school and beginning the self-appointed task of supporting the family. His first job was in a grocery store, but his wage was not large enough to keep the domestic machinery moving and so his mother took in washing. Two years later, however, he had gone to work in a drug store, and had done well enough to enable him to put a veto on this drudgery. The good woman resisted his demands, and declared that the money thus earned was sadly needed. But John had come upon the days of his leadership. He prevailed. And his mother, woman-like, was proud and happy that he had prevailed. The family had a new head, a staunch, upstanding young fellow who meant to get along in the world.

For ten years the current of his existence flowed on peacefully enough. He did his work well and was beloved of everybody. But he showed no especial talent for business or barter. He had formed the reading habit and had thus been able to pursue an education even though he had had to quit school. A favorite story in St. Peter is the one that tells

how he came to be a steady patron of the public library. A friend, who noticed him reading an unworthy book, offered to pay his dues at the library if he would read three good books. The selections are noteworthy — Prescott's two histories of conquest, Peru and Mexico, and "Ivanhoe." Johnson accepted; and having got the habit he went on reading library books and paying his own dues.

But he was an even deeper student of men than of books. The social side of his character was strong and he delighted in the companionship of all sorts of people. He seldom missed a dance; he sang in the church choir; he joined the various lodges of the town; he was a leader in all the varying social activities that relieve the tedium of life in a small city. And the genial warmth of his friendship was a pleasant thing that no one liked to forego. For it was no surface manifestation, but glowed from the inner man with unmistakable sincerity. There was no question of the realness of the interest he felt in the affairs of his neighbors and friends — for he had then no thought of a political career.

Then came the second important event in his life, his selection as editor of the St. Peter *Herald* by the owners. So far as was known, he had no talent for writing, but those who chose him knew his capacity for development and they were sure of his ability to gather the news of the town and make friends for the weekly. The event justified their judgment, for John Johnson developed a rare aptitude for his new work. He took a larger place in the community, he managed the county fair, he organized a lecture bureau, he became captain of the local militia company — and he got into politics. His cronies about the big stove in the drug store had mostly been Democrats, and his own inclinations, confirmed by his admiration for Mrs. Cleveland, fixed his political beliefs as Democratic — which jumped with the policy of the *Herald*. Under the influence of these broadened activities, his natural gift for speaking had begun to develop, and he tried his wings with growing success, after some Demosthenean practice in private.

DRIFTING INTO POLITICS

His first nomination to office came in 1894. He was thirty-three, and had just wooed and wedded Miss Elinore M. Preston, a young drawing-teacher of twenty, lately arrived, and they had set up a modest home together. The Democrats of the county named him for state senator, but, despite his general popularity and the valuable asset of his Scandinavian birth, he was not able to overcome the normal Republican majority. Named again in 1898, he made a campaign largely on state issues. He reasoned that a state senator had nothing to do with national questions and much to do with matters of state interest. He talked to the voters with that winning and frank friendliness that enables him to capture any audience, and always about subjects nearest their hearts. He was elected, and served at two regular sessions and one special session of the legislature. As a member of the minority he could not aspire to leadership, nor did he yet exhibit the qualities of a legislative leader. And while his record for that four years was clean and admirable, his colleagues certainly had at that time no premonition of what the political future held in store for him. "John" was to them a mighty good fellow, straight as a string, but rather easy-going and good-natured. Neither they nor he discerned his potentiality for setting the prairies afire with enthusiasm.

At the end of his term, however, some of the Democratic leaders wanted to give him the empty honor of leading the party to defeat, for Minnesota is a Republican state. Johnson, however, had begun to develop that sound political sagacity which has marked his later career, and he put aside the suggestion gently, but firmly. Instead, he ran again for the senate. The Republicans put up against him another Johnson — and it was "too much Johnson" for him. Here again fortune smiled upon him — for, in Minnesota, state senators are ineligible to the Governorship, and success in that campaign would have cheated him of the nomination of his party two years later. Defeat thus came to him as a blessing in disguise, a buffet of fate whose beneficent meaning he could not then guess.

THE NOMINATION FOR GOVERNOR

The year 1904 found the Republican party of Minnesota rent by faction. A long period of political supremacy, broken only by John Lind's two years in the Governorship, had bred a contempt of the opposition, and had subjected the party to a leadership that was not always public-spirited and unselfish. There was bitter complaint in many quarters about the intrusion of railroad and other corporation

influence into the conduct of the party's affairs. Robert C. Dunn, who had served as state Auditor, appeared as a candidate for Governor, backed by railroad influence. His pre-convention opponent was Loren W. Collins, of the supreme bench. There was a bitter contest, and when the convention met, the rivals were so closely matched that the Dunn managers found it necessary to disfranchise the 113 delegates from Hennepin County (Minneapolis) in order to win. This act caused a violent disruption of the party, and the Democratic leaders saw that the opportunity was ripe for them, if they could but select the right man. At a conference they decided that John Johnson was that man. They reasoned that, to start with, he was of Swedish parentage, and that for very pride the Swedish votes would go to him, as they had to John Lind. Next, he was a native-born Minnesotan of the best type. On the railroad question he had showed his colors by standing out in the senate for the bill increasing the gross earnings tax. He was a good campaigner, too, as they knew him in his home county. And lastly he was acceptable to the Collins Republicans, who had made up their minds to punish the Dunn usurpation. Three of his Republican colleagues in the senate had already urged him to seek the nomination, and had promised their active support.

But the St. Peter editor was not sure of himself. He feared defeat in such a campaign, and he had no money to venture on such an uncertainty. After much consideration, he made up his mind not to run, and wrote a telegram to the state Democratic organ, declaring himself out of it. But before dispatching it, he called up a brother editor, Frank A. Day, of Fairmont, who had served with him in the senate and was a personal and political chum. Mr. Day besought him not to send it until the two could talk things over. A trip to St. Peter and an all-night talk on the Johnson veranda resulted in the momentous decision to take the nomination, if it was offered. That long talk changed the course of political affairs in Minnesota, and its effect may yet be felt in national affairs. The Democratic convention named Johnson by acclamation, and arrangements were at once made for a whirlwind campaign.

It was characteristic of the candidate that in all the 103 speeches that he made, reaching seventy-four out of eighty-four counties in the state, he never once attacked the rather vulnerable record of Dunn, his opponent. This was good sense and good politics. He knew the Collins men would see to it that Dunn was smitten hip and thigh. His business was to get acquainted with the people, and to that task he devoted himself with an ardor and effectiveness unparalleled in Minnesota political history. It was rough campaigning, requiring him to endure much hard travel, by team as well as by train, and to go for long periods with insufficient sleep and food. As showing the marvelous endurance of the man, take this record of one cold, rainy day in October, 1904:

Having spoken at Canby the evening before and caught cold, he arose at 4 A. M., and drove breakfastless twenty-nine miles to Clarkfield, where he talked for an hour and a half. Then he caught a freight train and rode thirteen miles to Dawson, where in the afternoon he spoke for an hour and a half. Still taking no food, for which the cold had given him a distaste, he drove thirteen miles to Madison, where he finished a foodless day by speaking for two hours and a half in the evening. Total travel, fifty-five miles; total speaking, five and a half hours. And this when he had barely recovered from a third operation for appendicitis. The enthusiasm grew as he traveled and talked from St. Peter to St. Paul, and this brought him its own reward. The result was a surprise, particularly to Dunn. Although Mr. Roosevelt carried the state by the tremendous plurality of 161,000 over Parker, Johnson won over Dunn by a plurality of 7,800. The meaning of this was that some 85,000 Roosevelt men had also been Johnson men.

After a wise and useful administration, Governor Johnson came before the people in 1906 for reëlection. Two years before he had been an experiment, which the Republican voters were willing to try. He now appeared with a record behind him and asked for their suffrages. The Republicans, considerably chastened by their misadventure, strove to select a foeman worthy of Johnson. They had such a man in John F. Jacobson, a Norwegian legislator from the western part of the state with a record for rugged honesty and dogged persistence in the people's behalf. But the railroads were afraid of Jacobson, and while they could not control the convention, they contrived to prevent the nomination of

the man they most feared. From among the less objectionable candidates, Albert L. Cole was selected. Undeservedly enough, the stigma of corporation influence was at once fastened on Cole, and he bore it all through the campaign to his final defeat. It was an "off year," with no Presidential candidacy to help the Republicans. They soon saw that defeat was inevitable, but none of them expected the astonishing result. Governor Johnson surpassed the record of his previous campaign, and reached every county of the state but six, making in all 119 speeches in the space of seven weeks. When the votes were counted it was found that he had swelled his former plurality of 7,800 into a handsome 72,000 over Cole. It was a purely personal victory, too, for the rest of the Republican ticket was elected by varying pluralities, the largest being nearly 85,000 for Edward T. Young for Attorney-General.

A TERM OF GOOD APPOINTMENTS

It remains, then, to inquire what John Johnson did in the Governorship, and what the Governorship did for him. There are some things about his record that are significant. In making appointments, for instance, he has steadily pursued the plan of striving to get into the office the very best men that could be obtained for the salaries the state pays, quite irrespective of politics. His first feat was in persuading T. D. O'Brien, a leading lawyer of St. Paul, to take the insurance commissionership at a considerable personal sacrifice. That department had been allowed in previous administrations to fall into unworthy hands. The new Governor builded better than he knew, as presently appeared. The leading life insurance company of the state was found to be in a deplorable condition, and the revelations in New York seemed likely to find a parallel on a smaller scale in Minnesota. The Governor and his commissioner took matters in hand, forced the resignation of all the responsible officers, put a committee of leading business men in charge, and actually pulled the company out of its morass. The new management has entirely rehabilitated the company, and put it on a solid and enduring foundation. Meanwhile, the officers who were looting it were indicted and prosecuted in due course. Only one was eventually convicted, the others slipping through the meshes of the law.

Governor Johnson came into office knowing little or nothing of insurance, but he grappled with the intricate subject at once, when its importance began to be manifest. And he mastered it, just as he masters anything with which he grapples. It was he who suggested to President Roosevelt the calling of a convention of Governors, attorneys-general, and insurance commissioners to formulate a standard code for all the states to adopt. It was he who presided over the convention. It was his commissioner, Mr. O'Brien, who headed the committee of fifteen that drew up the model insurance code, which has already been adopted practically intact by five states Here was one instance where it paid to make a high-class appointment.

Another was seen in the naming of the new permanent state tax commission. The law authorizing this body, and charging it with the duty of remedying the numerous tax evils to which Minnesota, like most other commonwealths, is subject, had been passed only after a bitter fight in the legislature. The railroad and steel trust interests were especially hostile to it, and one of the main arguments was that the commission would be made the plaything of politics. Governor Johnson's answer to this was characteristic. Before the ink on his signature to the bill was dry, he notified the senate and sent word informally to the house, that he had selected three men of the highest type of citizenship. One was a Republican who had been an honored leader in the senate; one was a Democrat who had served his district in Congress; and the third was a nonpartisan tax expert, who held the chair of political economy in the state university. The appointments were immediately and unanimously confirmed by the senate, while the house expressed its approval by a rising vote. Both houses were heavily Republican. That commission, although in office but a year, has already demonstrated its high efficiency.

Governor Johnson has not proved a radical reformer. He has taken advanced ground on some matters, and has made strong recommendations to the legislature — as, for instance, his urging of the initiative and referendum, a uniform divorce law, the registration of lobbyists, a license tax on foreign corporations, and many purely state reforms. But he never has taken the smallest step toward coercing the legislature to do any of these things. His

messages have ended his activities in that direction. What might have been his course if he had had a legislature of his own political persuasion to deal with, is difficult to say. But the radical Republicans in the law-making body have been in full control and they have enacted many new laws, some of which he recommended, but for all of which he cannot, of course, claim credit or be judged accountable.

The Governor of Minnesota is, by virtue of his office, a member of numerous boards and commissions. Governor Johnson has overturned precedent by attending all meetings of these boards and taking an active part in their proceedings. He has made no attempt to dominate them politically, but he has mastered the details of their business and brought his strong personality into play in settling their problems.

MANAGING A CRITICAL SITUATION

The Governor's firm yet tactful management of difficult situations is well illustrated by his course during the threatening strike of last summer on the iron range. He went to the scene of action, taking with him trusted advisers, and studied the situation at close quarters. He recognized the dangers that hovered over a large, populous region with many ignorant men of foreign birth idle and excited. But he held an even course, insisting on peace and the mutual recognition of the rights of both sides. He drew from the steel-trust officers a pledge that they would provoke no outbreak; he cautioned the mine foremen and superintendents; and he held heart-to-heart talks with the leaders of the men. At Eveleth he made a speech and laid down these principles: The men have a right to quit work, a right to organize, and a right to persuade others peacefully to quit. On the other hand, any man who wants to work has the right to do so, and the state will protect him in that right. After he had gone back to the capital, some collisions were narrowly averted. Officious deputies broke up a strikers' meeting. There were sullen parades, with red flags in the van. Then the Governor issued a proclamation declaring the right of all persons to hold peaceable meetings, but calling on the strikers to cease marching in large numbers, because of the menace to public peace, and to be careful not to trespass on private property. He threatened to send some state troops if these orders were not obeyed. After that, the strikers made no more trouble and the difficulty soon died out.

Old friends of John Johnson note with pride the broadening effect that the Governorship has had upon him. It has demonstrated anew, what they have all along been sure of, his wonderful adaptability to his environment and his remarkable capacity for development as emergency shall demand. When the drug clerk was called on to become an editor, he mastered the new vocation easily and quickly. When the editor went into politics, this avocation was easy for him. He learned to speak with facility, and he developed that native interest he had in men, so that it became a positive and genial influence exerted unconsciously on all he came in contact with. The work of the state senate he readily learned to take his share in. Yet when he came to the Governorship, he was little tried and little known. Its great responsibilities sobered him. There was instilled into his character a subtle dignity, which never becomes obtrusive but is always there in the background, as befits the first citizen of a great commonwealth. It never interferes with his honest cordiality to all who come to see him, nor with his unaffected simplicity.

His rugged face, always well-seamed, shows new and deep lines of character. It is a homely face, yet kindly. The generous nose is slightly turned to one side, giving it an asymmetry that is remarkable. He might be two men, if you were to view him from one side, and then from the other. The photographers, who study facial aspects so carefully, find that one side is as striking and as characteristic as the other, and portraits of him that are extant thus differ widely and yet do him no injustice. His eyes are of the deep blue that speak of Berserker forbears. They look straight out at you between narrowed lids, the wrinkles about which betoken shrewd humor rather than calculation. He has the large, mobile lips of the orator. He is a tall man and might be taller, if he stood quite erect. Despite his rather nice taste in matters of dress, it is easily seen that his frame is large, loose-jointed, and big-boned.

A DEMOCRATIC PERSONALITY

Though the Governor's quarters in the new state capitol are impressively luxurious, their occupant has lost none of his democratic approachability. There is no elaborate system

to guard him from the public. Once and anon he issues from his inner office to the reception room where many are waiting to see him. His eye keenly searches out those whom he knows, and he disposes of small matters easily and quickly. To each caller he gives a brief handshake that is cordial without being patronizing. He has learned the public man's trick of grasping an outstretched hand in such a way as to prevent his own from being tightly gripped. The visitor with whom he wants to talk he leads into the inner office and, assuming his favorite attitude with his feet cocked up on the state's expensive mahogany table, he soon finds a way of putting his caller at ease. He impresses the visitor somehow with his personal interest in him and his affairs, and it is a genuine interest that comes directly out of the man's kindly heart. But the Governor does most of the talking, once he has learned your errand. He talks readily and clearly, whatever the topic. His ideas seem to flow freely and his face lights up with the half-amused smile that foretells the coming figure or illustration or story. He is not much given to story-telling, though, whether speaking in public or private. If he does tell a story, it is because it is appropriate, not because it is funny. Oratory is his natural and accustomed medium. Even in personal conversation, he constantly frames his sentences as an orator would, turning the idea about and iterating it, so as to drive the point home. Gestures, both varied and expressive, he uses continually — the long forefinger in its impressive solitude, the fist striking the open palm for emphasis, the outspread hand that accepts or rejects.

In public speaking, his manner is not greatly different from this. He has the orator's faculty for seizing and holding the attention of his audience. He adapts himself almost unconsciously to the character of that audience. If campaigning in the country, his illustrations and his metaphors are of a rural hue. Delivering a commencement oration, as at the University of Pennsylvania last June, he described the First Minnesota and its glorious achievement at Gettysburg as "the Minnesota class of '61, whose blood, shed for you and for all, has been a part of the soil of Pennsylvania now for over forty years." Brought before an audience of newspaper men and public men, as at the Gridiron Club dinner in Washington last autumn, he fell into a gentle raillery, whose satirical flavor was so delicate and so persuasive as to capture the admiration of every man who sat under its spell. Yet not one of them can tell what Governor Johnson said in that Gridiron speech, which brought him forward into the limelight anew. He told no stories, related no anecdotes. There was no protuberant ego in it, either, but rather a seemly modesty, which when one looked behind it was seen to conceal a man of kindly humor.

ELECTED TO REBUKE CORRUPTION

Governor Johnson has often been compared with Lincoln, whom he resembles in physical make-up as well as in the success with which he has overcome untoward circumstances and has embraced opportunity as it arose. His early life, like that of Lincoln, was clouded with poverty and hardship, and he, too, had to emerge by his own exertions from difficulties that would have crushed one less self-reliant. But his political career thus far recalls rather that of Grover Cleveland up to the time of his triumphant election as Governor of New York. Like Cleveland, he was the instrument used by the people of a great state to rebuke political corruption. Like Cleveland, he has proved that the popular reliance upon him was well founded. But he possesses some characteristics valuable in a public man that Cleveland lacked, such as geniality, approachability, readiness as a speaker. While not naturally so industrious as Cleveland, he possesses a wonderful capacity for work when it is necessary. Driven like a galley-slave by some impending task, his brain seems to work with unwonted clearness and vigor. He has the courage of Hughes tempered by the tact of Taft. He is as convinced of the supreme necessity of enforcing the law as Mr. Roosevelt, but impulsive denunciation of those who do not agree with him would be quite foreign to his character.

John A. Johnson is not a profound man, neither is he by any means a superficial one. It is his supreme common sense that carries him through to the solution of every problem that assails him. It is the charm of his personality that makes a friend of every man who comes within the radius of his influence. Often radical in utterance, he is usually conservative in action. Constructive statesmanship he has never as yet shown in great measure, yet he is sensitive to the thought of the masses and knows how to give it effective expression.

GOVERNOR AND MRS. JOHNSON
Taken at their St. Peter house in 1905 before his election to the Governorship

GOVERNOR JOHNSON'S HOUSE AT ST. PETER
In an all-night conference on the porch, he was persuaded to become a candidate for Governor

GOVERNOR AND MRS. JOHNSON, IN THE SUMMER OF 1905
Until this time, his political career consisted of three terms in the State Senate

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GOVERNOR JOHN A. JOHNSON, OF MINNESOTA

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MRS. ELINORE PRESTON JOHNSON

GOVERNOR JOHNSON LEADING AN AUTOMOBILE PARADE IN ST. PAUL

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THE GOVERNOR OF MINNESOTA IN A ST. PAUL RESTAURANT

He was elected in the Presidential year 1904 by a majority of 7,800 votes in a state normally Republican. After two years' administration, he was re-elected by a majority of 72,000

"THE DEATH VALLEY LIMITED"

It is even necessary for a locomotive to carry an extra water-supply when venturing into Death Valley

BEFORE THE RAILROAD CAME

Twenty mules, two special wagons, and a trailing water-tank

THE PALISADES OF AMARGOSSA CAÑON

EROSION ON THE BARE EASTERN WALLS OF AMARGOSSA CAÑON

THE TWO WAYS INTO DEATH VALLEY
The old wagon-road and the new railroad, side by side

SILVER LAKE, ON THE TONOPAH AND TIDEWATER RAILROAD
Half the year a fresh-water lake, the other half a blistered flat

"THE LILA C."
The great borax mine of Death Valley

NITRE FORMATIONS
Saltpetre is one of the sources of mineral wealth in Death Valley

THE GENERAL OFFICES OF THE NEW RAILROAD AT LUDLOW
From this small house all the management of the construction was conducted

A TRACK-LAYING GANG AT WORK ON THE TONOPAH AND TIDEWATER RAILROAD

A STRETCH OF TRACK ALONG THE VOLCANIC FORMATIONS IN AMARGOSSA CAÑON

BRIDGING THE AMARGOSSA RIVER

All food, water, and material was brought to the construction-gangs from Ludlow. The country would not support a single soul. There was no strike or other labor trouble during the building of the road

SEIZING THE DESERT'S LAST STRONGHOLD

THE COMPLETION OF THE TONOPAH & TIDEWATER RAILROAD WHICH BINDS DEATH VALLEY TO THE REMAINDER OF THE WORLD

BY

ROBERT E. RINEHART

INTO the desert town of Rhyolite there puffed and pulled one day last autumn an undersized locomotive with its coal tender, or rather oil-tank, and half a dozen dust covered coaches, including a private car and several Pullman sleepers. From these coaches disembarked a crowd of prosperous-looking men. Otherwise, the train displayed nothing remarkable, nothing nearly so bizarre as the dozen freight-cars, the second-hand passenger coach, and the single-truck electric car which was to make up the regular "Express and Local" of days to follow. But it was the first train to run over the completed Tonopah & Tidewater Railroad.

By all canons of Nevada etiquette, it was proper that Rhyolite should honor the occasion with a "gala day," fittingly heralded in the press of the land; for, out on the desert, the completion of a railroad to a mining camp surrounded by salable prospects acts as "Giant Powder No. 1" with a strong dash of "glycerine." The first train comes in with a boom whose shock-waves are registered in every stock exchange from 'Frisco to "the curb." Not for one golden second did Rhyolite and its sagacious promoters neglect the first train over the "T. & T." There were fireworks and firewater in abundance. A brass band imported from Los Angeles "discoursed inspiring music." Spellbinders, picked from desert dignitaries and railroad potentates, spun golden, grandiloquent metaphors about the future greatness of the city — Rhyolite scorns the appellation "camp" — till they set going the echoes of the desert hills. A great day was this coming of the "T. & T." — just such a day as a hundred desert camps, now forgotten, had riotously celebrated, and such as a hundred other camps, not yet staked out on the Great American Desert, will celebrate again.

But aside from any news value of Rhyolite's celebration, aside from the fact that the new railroad gave a shorter route by over a hundred miles from Los Angeles to the Nevada goldfields than the Las Vegas road, the completion of the Tonopah & Tidewater Railroad was an event of unique significance. That pioneer train, starting from Ludlow, a little sun-baked Santa Fé station in the heart of the Mojave Desert, had picked its way up the Great Mojave Wash. Skirting the lower end of Death Valley by a bare thirteen miles, it had dragged itself through the long, hot length of Amargossa Cañon into the sizzling dry lakes of Amargossa Wash. It had passed in the torrid shadow of Eagle Mountain where a railroad spur, turning to the west, ran almost to the foothills of Funeral Range. When, finally, it brought up in Rhyolite, it had traversed one hundred and seventy miles of sand and sun, greasewood and cactus which had been the haunt of rattlesnakes, coyotes, a few prospectors, and freighters of borax. The initial trip of this desert railroad marked the first successful assault on the last and strongest desert citadel, Death Valley.

For more than a quarter of a century an uphill fight was waged against the desert defenses of Death Valley. One by one, other desert strongholds fell, but the valley of grim names and grimmer traditions jealously guarded its isolation. By flaunting its worthlessness and its bitter hardships, it forbade approach to all save those desert Argonauts who dared its pitiless sun and maddening maze of cañons to bring back its Golden Fleece, whose other name is borax.

When borax, several decades ago, was still a laboratory oddity, a precipitate borax was

found on the dry lakes of the Death Valley sink. The value of this discovery was fully appreciated, because some chemist had ascertained that borax, in addition to being an aid in smelting and other specific uses, was an exceptionally good soap, especially for hard water.

But in those days Death Valley was a long way from civilization and bore a most unsavory reputation. Early overland emigrants seeking a short-cut had tried the deep valley beyond the long chain of mountains — later to be dubbed Funeral Range — and had fared badly. Whole parties would become bewildered while crossing the valley's glaring salt-crystal floor and lose their way, to wander into the quicksands of salt-marshes and perish, or, sun-crazed and thirst-tortured, to try in vain the many little cañons and gullies that radiate from the rim of the sink like the tentacles of a devil-fish. Even desert Indians gave the region an ugly name — Valley of Skulls. As the years went by, only those nomad prospectors termed "desert rats," those gaunt-bodied, gaunt-faced men, with queer eyes burning in cavernous sockets, challenged the sweltering solitude of this man-shunned valley.

But, when civilization wants anything, the time is not long until civilization has it. Civilization wanted borax. Up in Death Valley plenty of it had been left by evaporation of boracic acid that had oozed up through the volcanic ash of the valley or had washed down from the adjacent mountain ranges.

The problem was to freight it by wagon a hundred miles to Daggett or Mojave, a weary, costly transportation. The round-trip consumed a week. Food and water had to be carried every foot of the way. Even special wagons were necessary—tall-bedded vehicles with wheels seven feet high and seven inches across the tire. Built to order in Mojave, they cost $1,000 each. Two wagons, a trailing water-tank, and twenty hardy mules made up the primitive "Death Valley Express."

Casting about for a new campaign of attack on Death Valley, borax traffic hit upon the scheme of some visionary genius and built a graded road, over which traction engines were to haul long trains of wagons around Kingston Range and down the Mesquite Valley to Ivanpah, where the Sante Fé railroad had a spur. The road completed, the project was promptly pronounced a failure. There in the desert the road still lies, a magnificent, expensive specimen of road-building, over which not one load has ever passed.

This unsuccessful experiment demonstrated that sooner or later a railroad had to go to Death Valley; the sooner, the less expensive. So the "T. & T." came about. The original plan, however, was to bring the new railroad up from Las Vegas, around the Charleston and Kingston ranges. All surveys were made over the route and a large gang of graders began work out from Las Vegas.

But at this point the potentates of the Salt Lake Railroad and the prospective "T. & T." had different ideas about future freight rates over the Salt Lake Railroad. Without discussing the question at any great length, the "T. & T." people opened negotiations with the Santa Fé Railroad and at the same time ran surveys up the Mojave and Amargossa valleys. Then, one night in September, 1906, the grading gang was put aboard train at Las Vegas and the next day unloaded down at Ludlow, a two-house wayside station on the Santa Fé that had previously existed because of some mines seven miles to the south.

Before the week was out a thousand men were grading along the line of the new survey. One year later the "desert rats" of Death Valley, peering from Funeral Range, could see in the distance the toy-like outline of the "Death Valley Limited," a facetious sobriquet given the nondescript train that followed on the heels of the track-laying gang. Two years after the Las Vegas exodus, Rhyolite with much enthusiasm and more publicity welcomed the first "T. & T." train through for Los Angeles.

Jumbled with Rhyolite's jollification was a handful of desert men, the engineers, superintendents, and foremen who had brought the new railroad through desert cañons around desert hills. They could celebrate the railroad's completion with the enthusiasm of men who had accomplished a hard work well done; for desert railroad-building at its easiest is never play, and it took the ripe experience of many years of desert railroad-building to overcome the obstacles of the Death Valley route. Given a two-hundred-mile stretch of country to traverse, from which not one gallon of water nor one pound of food could be levied, the builders of the "T. & T.," in taking care of their 1,000 laborers strewn along the survey,

had something more than trigonometrical problems to solve.

No Arctic expedition ever moved forward with more organized care than the "T. & T." crept northward through the sun and sand. The engineers practically built the road from a ten-by-ten pine-board office at Ludlow. From the laying of the first tie to the spiking of the last rail, every detail of the work was executed from this little room. As the steel rails pushed their way up the Mojave and Amargossa Washes, the little office, by means of a pioneer telephone line, kept constantly in leash the steel-gang at the end of the completed track, the half-dozen grading outfits strung ahead for twenty miles, and the surfacing camp ten miles to the rear.

System was carried to the third degree. If the cook at Eagle Mountain grading-camp had grown intolerable, if the blasters in Amargossa Cañon needed powder, or the surfacers needed prunes, the Ludlow office knew it, and powder, prunes, and cook were immediately on the way to the front. Upon a chart in the Ludlow headquarters, every sundown, the movement of each gang was registered—where it was, what progress it had made that day, and what it should accomplish on the morrow. If the steel-gang was crossing a trestle, the chart had the when and where of it recorded. There was twenty-four hours' work daily in the ten-by-ten headquarters; and the road went through without a setback.

No labor difficulties bothered progress, even when the railroad passed the California boundary line into Nevada, where master and man often have antagonistic ideas about labor conditions. The laborers were easily handled. Working under the intense desert heat, away from grass, trees, and water, develops a peculiar workman. He is a silent, plodding fellow. He is out in the desert because of good pay; because, freed from the calls of the city, even a spendthrift can save money. So he sticks obediently, even grimly, at his task, living for the future, whether it is the prospect of a little home or a week's spree and then back to the desert. He works, eats, and sleeps as methodically as a machine. During that soft, restful portion of the day between the evening meal and darkness, even his attempts at amusement are subdued. Intoxicating liquors are never allowed in camp. Quarreling is unknown. When the shadows grow heavy on the burnt hills, the entire camp rolls itself in blankets and sinks into the intense silence and noiseless sounds of the desert night.

Just why it is called "Tonopah & Tidewater," might perplex a person looking at the map. The new railroad neither reaches Tonopah nor comes anywhere near any tidewater. But it ekes out a passage to Tonopah, with the assistance of the "Brock" road, and has a business acquaintance with the Pacific Ocean at San Pedro, by grace of the Santa Fé Railroad. Moreover, "T. & T." affords fine alliteration.

Prejudiced persons, disposed to sneer at the "T. & T.," might term it a toy. Such a slur would be rank injustice. It is no plaything. In addition to shipping out borax, it has before it the tremendous task of making useful this land of too much heat and too little rain.

And there is little that is toy-like about the Tonopah & Tidewater Railroad. It is not difficult, doubtless, to point to greater engineering feats; but at that, the "T. & T." is no achievement to be scoffed at. To bring a roadbed through the thirteen miles of Amargossa Cañon required deep cuts, steep hills, and scores of dizzy trestles, which lift the new railway out of the land of toys; and it cost $50,000 a mile to do it. The world's interest in the "T. & T." road, however, is not in the engineering achievement, but in the economic significance that the new railroad affords an entrance to ten thousand, yes, twenty thousand, square miles which three years ago might very well have been on the planet Mars.

Though the worth of this reclaimed region can be narrowed down almost to its mineral wealth, nevertheless one cannot fix a just valuation of its ash-heap hills and blistered washes. Hitherto, they have been so inaccessible as to defy careful investigation. Where other desert districts are considering such urban enterprises as irrigation, the land of chuck-a-wallas has just begun to look at itself. Prospectors, it is true, have been "scratching" over the ground for decades but their scratching can be judged for what it signifies in mining parlance.

Death Valley territory is, in fact, a Land of Promise. Great expectations are its chief assets, expectations that should not be doubted despite the fall from grace of the much-exploited Greenwater district. Unquestionably,

gold, silver, copper, and perhaps iron ore are hidden beneath the volcanic ash of this desert. More careful prospecting, now possible through the arrival of the new railroad, will bring them to light.

But Death Valley's greatest contribution to the world's wealth is likely to come from mineral deposits other than precious or useful metals. The soil complexion and rock formation, different from that of any other region in the Great American Desert, point to another class of minerals. Boron it has in unlimited quantities. Soda can be added, and what is of far more moment, nitre. Soda Lake, down near the ruined Mojave Fort, on the old Salt Lake stage-line, was once worth working for its soda, and is again worthy of business consideration now that a railroad touches its very edge.

Climbing along the jutting east walls of Amargossa Cañon, a prospector noted the brick-red soil and carried away a specimen. Analysis of this sample brought forth a good showing of nitre. Further investigation disclosed that the east walls of the cañon and the adjoining foothills were immense nitrate beds, acres upon acres of them. True, it is a low-grade nitrate, but nitre is there just the same, the only deposits of it in this country. The commercial value of the discovery must be determined by the future.

Years may be needed to show the true worth of this desert Land of Promise. Still, the time may not be long. Most desert growth is rapid. A hillside as baldly bare as a city pavement will, after a night's rain, stand transfigured in the morning into a garden field of kaleidoscopic flowers, more exquisitely formed and delicately hued than the exotics of a conservatory. Ludlow, headquarters of the "T. & T.," is typical of the magic of desert life. The sun-grilled desert station, comprising a telegraph and ticket office, and a little later Mother Preston's general store and lodging house, was in a day transformed into a railroad division point. In a year it had complete railroad shops, a large freight yard, and a hundred frame houses.

Had a prospector been asked three years ago what was the most sinister, inaccessible spot in the Great American Desert, he would without hesitation have named Death Valley. To-day a tenderfoot tourist can penetrate its once forbidding mysteries with as little bother as a trip to Lake Tahoe and with less travel than a jaunt to the Adirondacks. He can bunk in Los Angeles one night and sleep the next at the foot of Skeleton Peak.

JUDGE POLLARD'S PLEDGES

A MISSOURI JUDGE'S SYSTEM OF REFORMING DRUNKARDS WHICH HAS BEEN ADOPTED BY THE ENGLISH PARLIAMENT

BY

ROSLYN D. WHYTOCK

WILLIAM JEFF. POLLARD, judge of the Second District Police Court, in St. Louis, Mo., has accomplished something that no other American has ever attempted, in having had his pledge-system for drunkards adopted as a law by the British Government.

His probationary pledge-system is simple in its working and the results attained have been wonderful. It involves only a signed agreement between the defendant and the court in which the former promises to abstain from the use of liquor for a year, his sentence in the meantime being stayed. The violation of the pledge means the fulfilment of the sentence.

The method used by Judge Pollard in his court is to withhold sentence and release the accused, provided the offender gives his solemn pledge to abstain from the use of intoxicants for one year.

Any breach of the pledge, even to the extent of one drink, terminates the agreement and makes the offender liable to re-arrest and the carrying out of the original sentence, stayed by the court upon the prisoner's promise to become a total abstainer.

This system is not authorized by state statute; the Judge simply takes it upon himself to carry out this work. He acts as his own probationary officer, being aided somewhat by the police, to see that the pledges are not broken. When he gives a prisoner his liberty upon the condition of his abstaining from liquor, he compels the man to report to him at his home or in court at least twice a week for a month or two, that he may see that the promise is lived up to. The Judge further asks the policeman who made the arrest to keep his eye on the defendant and report if the pledge be violated. Should the pledge-taker break his promise, and such instances are rare, Judge Pollard forthwith inflicts the sentence originally given, a term in the workhouse or a fine.

It is five years since Judge Pollard first began his reform in St. Louis, but the world did not begin to hear of his plan until a little over a year ago, when he took a trip to England. There the Missouri magistrate told the reformers with whom he came in contact about his system, and they, seeing in it a practical method of dealing with first offenders, speedily gave it publicity, and the man from Missouri found himself suddenly celebrated. He was called upon to explain his plan. In a dozen English, Irish, and Scotch cities he told vast crowds of the methods he practised in his St. Louis court.

Members of the House of Commons became interested in the plan and he was asked to tell of its workings in the committee rooms. They were so well pleased with what the Missourian told them that they prepared a memorial, signed by twenty prominent members of the lower body, thanking him for his ideas and suggestions. The result was the framing of the probationary act, containing Pollard's methods, which is now the law of the British Isles.

England has gone a bit further than the Missouri jurist in that its law requires the probationer to keep away from saloons and questionable companionship during the period covered by the pledge. The English law further provides for probationary officers, whose duty it is to see that the pledges are kept, and to that end the pledge-takers are required to report to these officers from time to time.

Under the conditions that prevailed in the past, any man convicted of a crime, no matter how trivial, was barred from holding any civil-service position. When a man so far forgot himself as to become intoxicated and was haled before a police magistrate, he had a conviction registered against him and paid a double penalty — his fine or imprisonment, and his privilege to hold any Government office. Now, however, the first offender has an opportunity of working out his own salvation by signing a pledge of total abstinence and being put under supervision of probationary officers for a year, and if he keeps the pledge he does not have to pay a cent or serve a day and the word "convicted" is not inscribed after his name; thus he is still eligible to hold Government office.

The case that brought about the Pollard pledge-system came up in St. Louis some five years ago. There was brought before the judge one morning an old offender who, notwithstanding the fact that he had a wife and eight children depending upon his week's wages, made a practice of becoming intoxicated every Saturday. Then he would abuse his family, use profanity that startled the neighbors, and proceed to break up what little furniture they had. On this particular morning the wife came to testify against the husband in the hope that she might save him from himself, fearing he might do bodily injury to himself or the children. She begged Judge Pollard to be good to her husband, saying that he was thoroughly penitent.

The man was such an old offender that the average judge would have paid no attention whatever to his pleadings for mercy, but as Judge Pollard was considering the case the thought occurred to him that he might devise a means of releasing the man and at the same time put a stop to his weekly debauches. He wrote out a pledge and offered the man the choice of signing it or going to the workhouse. Such was the beginning of the Pollard pledge-system. The man kept his pledge and is now a sober and industrious citizen. He occasionally drops in to see the Judge, each time thanking him profusely for the start given him.

Judge Pollard has now a regular printed form of pledge. He has also gone a step farther with his pledges and has devised a nagging pledge and a support pledge. The nagging pledge is not intended only for the woman who is given to "henpecking," but also for the husband who makes a practice of giving his

wife wholesale abuse. Nagging is one of the eleven causes for divorce in Missouri and Judge Pollard believes that he is aiding, to a degree, in cutting down the number of divorces by the use of his nagging pledge. If a wife is brought before him charged by neighbors with using bad language toward her husband, as is often the case, Judge Pollard gives her the nagging pledge for a year. Husbands who are in the habit of applying indecent epithets to their wives and neighbors are requested to sign this pledge instead of serving a term in the workhouse. The policeman making the arrest is requested to watch such men and women and see to it that they do not continue their indecent practices, a repetition of which results in their being brought into court and having the original sentence carried out.

The support pledge is similar in its workings to the drinking pledge, except that it has to do with men who fail to care properly for their families. Judge Pollard realizes that no good can be accomplished by sending such men to jail, for the reason that the wife and children would be left without any income whatever, so he has these men promise to contribute toward the support of their families as they should, on penalty of a term in jail. Rather than break rock at fifty cents a day, the rate paid prisoners by the City of St. Louis, they keep the pledge.

Yet, if Judge Pollard believes a man to be deserving of punishment, he does not hesitate even though he may be a loser by it himself. A short time ago there was brought before him a man charged with beating his wife. The wife said that she would willingly stand the beatings if the husband were set free, stating that the family was depending upon his weekly wages and that he would have to go to the workhouse, inasmuch as they did not have the money to pay a fine.

"The rent is due next week, Judge," said the woman, "and if John goes to the workhouse we will be in a bad way."

"So you would allow yourself to be beaten by this brute," replied Judge Pollard, "in order to get enough money to pay the rent."

The woman replied that she would.

"Well, you won't have to stand for any beatings, and he will go to the workhouse and break rocks, and I will see to it that your rent is paid," was Pollard's answer. The man went to the workhouse and Judge Pollard paid the rent during his stay in jail.

Discussing the police court and his pledge-system, Judge Pollard says:

"The police court is the kindergarten of criminals. From there they graduate into the higher courts. All reform efforts should start at the beginning, and that is the police court, where the minor offenders against the law are arraigned. The majority of police-court cases are the result of drink, and putting the man in jail will not work any reform. You might as well attempt to prosecute a man into sanity by putting him in the workhouse or in jail. The drinkers to whom I refer are not the habituals, for you might as well try to prosecute a man into sanity who is insane as to prosecute a habitual drunkard into sobriety, and I say that habitual drunkards should not be incarcerated in the workhouse. An asylum for inebriates should be created for such cases as are beyond redemption, where they would be treated by skilled physicians. The occasional drunkard should be compelled to reform, and this I find can be accomplished by the pledge-system."

That Judge Pollard is succeeding admirably is borne out by his court records, it being shown that not over five men in a hundred who have taken the pledge go back to their evil ways. The pledge-takers know that Judge Pollard is serious and, rather than dare his wrath and spend a few months' retirement on the rock-pile, they lead a life of which no one could possibly complain.

Judge Pollard has been asked by what right he can make a man forsake liquor or properly support his family, on penalty of being re-arrested and sent to the rock-pile.

"The law gives me a right to release a defendant and stay his fine on good behavior, and I base my right to give pledges on the ground that it is for the court to decide in what good behavior consists," says the judge. "If a man is brought into my court on account of drink and he continues to drink upon his release, it is certain that he is not on his good behavior and so I give him the pledge, with the choice of keeping it or going to the workhouse, and experience has taught me that the pledge-takers remain on good behavior."

Judge Pollard is most original in his methods of dealing out justice in his court. A short time ago the case of a man charged with driving a galled mule was brought before him. The defense had expert witnesses in two veterinary surgeons. The veterinarians testified that the open sore on the mule's back was not painful to the beast despite its ugly appearance. The prosecuting attorney saw

just as emphatic on the other hand that the wound was painful. After listening for some time to the arguments pro and con, Judge Pollard announced that he would investigate the matter for himself. Accordingly he took his walking-stick and went from the court-room to the street, where the galled mule was tied to a hitching-post, and gently touched the cane to the wound. The mule, frantic with pain, attempted to kick the dashboard to pieces. Again the judge touched the wound and the beast snapped at him savagely. He then returned to the court-room.

Taking his seat on the bench, Judge Pollard announced that with all respect to the expert testimony introduced he would have to fine the owner of the mule fifty dollars.

"I asked the mule whether the injury pained him," said the judge, "and the beast replied that it did."

A SCHOOL BUILDING UP A COMMUNITY

THE REJUVENATION OF THE LINCOLN SCHOOL AT SANTA BARBARA AND ITS INFLUENCE IN THE NEIGHBORHOOD

BY

MILO A. TUCKER

A VISIT to the Lincoln school in Santa Barbara, Cal., three years ago revealed conditions as nearly what they ought not to be as it is possible to find in any public school in this country — rough, weed-grown grounds, dilapidated buildings, dirty and disfigured furniture (much of it refuse, banished from the other buildings of the city), a very high record of tardiness and a very low average of attendance; disorder, rowdyism, and viciousness, and an almost entire lack of anything that might be called a wholesome and proper school spirit.

The reputation of the school was bad; its traditions were wholly wrong; it was looked upon by the board with disfavor and treated as a necessary evil. Two things, however, the school did possess: plenty of children and a few good teachers.

Unfortunate experiments in trying to "fix things up" at the Lincoln school made the getting of money from the board for improvement pretty nearly an impossibility. They did, however, as a sort of a joke, give the superintendent an old tumble-down building occupying a part of the weed patch that served for a play-ground, on condition that he should get it moved away without expense to the district. The discovery of some good building material in its walls resulted, after some vigorous efforts on the superintendent's part, in the sale of the old wreck for seventy-five dollars, and upon the expenditure of this sum depended the physical transformation and rejuvenation of the school.

Previous efforts at flower-growing and tree-planting had resulted every time in the theft or destruction of every plant put out. This time, however, a canvass of the entire ward was made and the coöperation of the parents secured in the effort to collect proper plants and trees. The enthusiasm of the pupils was worked up to the point of clearing the yard and getting it ready for lawns and shrubbery. A professional gardener living nearby volunteered to supervise the planting, and a committee of parents petitioned the superintendent to make it the "palm school," and set out only palm trees. So great was the interest aroused that nearly thirty varieties of palms were given and some forty others bought by subscription — and all this among laboring people. A fine, large lawn was put in, with climbing vines and roses, and all kinds of flowers. Then the school board took hold of the movement, the playground was graded and the building repaired and repainted. To-day it is one of the most beautiful and well-kept places in the city.

All this helped some in decreasing tardiness and lessening absence, but it was soon seen to be only the beginning of things needed. Ground was secured and a fine garden planted. Vacant lots nearby were rented, fixed up, and

planted with potatoes, squash and pumpkins, and the proceeds realized from the sale of these crops were used to equip a workshop in the basement. The old-style, worn-out desks were banished from two of the large school-rooms and replaced by chairs and tables at less cost to the board than new desks would have been. One of these rooms was turned into a workroom for the girls, corresponding to the shop for the boys — the other room was made a workroom for both the smaller boys and girls. Much of the old formal order of the school-room disappeared; the children help each other, they work together at hand work and they study and recite together.

From the first grade to the eighth, this idea of working together is carried out and yet there is no weakening of control on the teacher's part nor lessening of real "good order" on the part of the pupils. One group of children will be found gathered about a "rug-frame," transforming with busy fingers a piece of old burlap and some discarded clothing into a serviceable rug; another group is tying a quilt; another building a bookcase; and still another constructing a punt for surf-boating. And during much of this time, while their hands are busy, they are talking over or reciting their lessons, most of which are based upon the things they are working with. At work with cotton goods, they have a real, living interest in cotton and they get its geography and history and nature-study because they have a real reason for wanting to know it. Arithmetic and language grow out of the work in the same way, and with a like living interest. The courses of training that this school is giving are as varied as the home needs of the locality and the different mental tendencies and physical requirements of the children.

A PRACTICAL COURSE IN MENDING

For example, there is a course in mending — mending anything that belongs in or about the home, whether of paper, or cloth, or wood, or leather, or iron, or tin, or crockery. Everything about the school is thus repaired, and many things are brought from home.

And this is the way of it: a broken thing is placed before two or more children and they are asked to work out a good plan for mending it. When they have done this, they report to the teacher and after some discussion a plan is adopted and carried through — to success, whether on the first trial or on the third. And I am quite persuaded that the educational value of a problem like that is equal to any that may be found in books. The ingenuity that some of them display in this mending is quite remarkable, and the training that they get makes not only for power but for culture as well, and for utility. These children have mended and reconstructed more than a hundred chairs and desks and other articles of school furniture, they have rebound more than two hundred school books, and they have constructed many cupboards and bookcases and shelves and other things of use for the various rooms. Before anyone can start upon the construction of any new thing he must draw a working diagram of the thing, and figure out just how much stuff it will take and what it will cost. There are courses in sewing, and quilting, and rug-making, and basketry, and housekeeping, simple housekeeping; and a course in selecting and buying the simple things needed for the home. They have "shoe-judging contests," and cloth-judging contests, and fruit-judging, and vegetable-judging — as their gardens and "patches" come to maturity.

UTILIZING WASTE PRODUCTS

One of the most acceptable features of this work is its economy. Of course almost anything can be done in an educational way where plenty of money is forthcoming. But in this school all of the various kinds of work are based upon the principle that there must be little or no expenditure. For the shop-work, refuse lumber from the mill and discarded dry-goods boxes have served for almost the entire supply. For the girl's department, burlap bags, and sacks, and old clothing, and remnants from home have been used. One example will illustrate the method followed: Raffia was needed for the work in basketry, etc., but raffia costs a good deal of money for so many children, so they were told by the superintendent that they must discover some plant that would furnish them the raw material for all this work. For weeks they searched the hills and the swamps and the fields, making experiment after experiment, until at length they found a flexible stem that would do for the framework and a fibre that has proven almost equal to the purchased raffia. These materials they gather, and cure, and color for themselves, and weave into waste-paper baskets, hand-bags, and all sorts of decorative articles.

On investigation by several of the teachers, it was found that nearly half of all the girls in that school of about three hundred were the only housekeepers their homes had, many of them, too, under ten years of age. This investigation also revealed home conditions that were pitiful in many cases and unsatisfactory in most instances. To remedy this, one of the rooms of the school building is partitioned off by screens into a kitchen, a living-room, and a bedroom, and there these girls, big and little, are taught how to keep house, to cook and to buy the simplest and cheapest foods; how to "tidy up" a room and make a bed; how to sweep and clean; and how to decorate in a plain and tasteful way.

At the close of the term, the children of this Lincoln School of Home Industry had a "day at home" which lasted for three days, and "a fair," at which the products of their hands were offered for sale. Hundreds of people from all classes visited the children at their work and the net receipts for the fair exceeded a hundred dollars. From all parts of the city are coming requests that something like the same plan be followed in the other schools of Santa Barbara.

And the results have certainly been little short of wonderful. The whole spirit of the school has been transformed and the entire neighborhood uplifted. And this, too, it must be remembered, under as hard conditions, perhaps, as any city in this country is required to meet.

None of the teachers had any special training for this kind of work. The plan had to be wrought by experiment. The attendance average has leaped from 86 per cent. to almost 97 per cent., tardiness is at a minimum, the spirit of the school is right, and the general deportment as good as in any school I have ever visited. Formerly more than 70 per cent. of all the pupils dropped out before getting through the seventh grade. Now 85 per cent. stay in until the eighth grade is reached. I was particularly interested in going over the results of the regular December examinations given by the county board of education to the sixth, seventh, and eighth grades of all the schools of the county, and to my intense surprise I found the papers written by the pupils of that school as high as any in the county, in spite of all the time given to the industrial work, and better by far than this school had ever before produced. This is a convincing evidence of efficiency.

THE NEW SCIENCE OF BUSINESS

A STORY OF BUSINESS SUCCESS

THE following is the story of a man who worked in a certain trade a number of years ago. Probably similar men existed in other industries at that same period, or since. Doubtless there are some elsewhere at this very moment. Such men will surely appear again, for it is a recurring type. It is good to recognize this type and to know what to do when it occurs.

The keynote of Fleetwood's career was ideas. It seemed, after his advent, that nobody in that trade had ever hit on a basic idea before. But he had dozens of them, hundreds of them. He had an idea every morning. They were novel, ingenious, revolutionary, and yet so simple and plausible that one wondered why, as a matter of common sense, they had never been applied before. In this particular trade, people had, up to that time, set considerable store on sound credit, known beginnings, and a stable policy. The leading house, for instance, was John Squire's Sons, an inherited business of world-wide scope, controlled by the third generation of the Squire family. Then came the younger house of Newman & Olds, not yet out of the shirt-sleeve generation — more aggressive, but as sound as Squire's. There were a dozen lesser firms, each with its special field, so that there was little room for new enterprise on a large scale — so it seemed. John Augustus Fleetwood changed all that. He shot suddenly out of nothing one day, like a meteor, and advanced by leaps and bounds. Before he had been in the trade a year, he dazzled it by the largeness of his ideas and the originality of his

operations. Young men wondered how an industry conducted on the old lines had been kept alive. Elders forgot the qualifications of a sound credit and said that genius made its own laws, and cited it as one of Fleetwood's strong points that he had started with twenty dollars and a scheme.

The career of a prosperous commercial house is frequently based on very slight modifications of a single product — packing, handling, selling. Newman & Olds, for example, took a commodity handled in bulk by John Squire's Sons, packed it in one-pound tin-foil packets, and built up on this a national business. But Fleetwood disdained to modify. Revolution was his programme. He assumed that everything done thus far had been wrong or had become antiquated — as was often the case. Taking the commodity at the point where it entered the country as raw material, he planned radical new methods of manufacture, packing, and distribution. Tin-foil packets were abolished as out of date. Middlemen were eliminated with their profits. Fleetwood dealt with the consumer direct, and at the same time strengthened relations with the retail trade.

He began as a broker, with a small line of goods packed in a striking way. This made progress with consumers. His weekly letters to the retailers, beginning soon after, made him known in three months. Men like John Squire, 3d, had them sent into the home-office by drummers, not because Fleetwood was important as a competitor, but because they wanted to read what he said. When the trade journals learned this, they published them as news. They also interviewed Fleetwood, and the latter laid down theories of the industry so broad and striking that it seemed like country mapped for the first time. Old Man Squire had often spoken for the trade, and the elder Newman, too. But not like this! Their most comprehensive theories never took them beyond prospects for fall business. Then Fleetwood allied himself with a manufacturing house that had run to seed, and formed J. A. Fleetwood & Co., with big plans for reconstruction. Later there was a merger with Wall Street interests, and the incorporation of The Fleetwood Company, with still bigger plans. After that, subsidiary corporations were formed one by one, each with its appointed work — to deal in raw materials, or to control patent rights, or to sell in certain territory. Then, finally, came the holding company, The Fleetwood Allied Interests and Securities Company. During this activity, Fleetwood was prominent in the trade press as spokesman for his plans and policies. He outlined new technical processes that were to make goods better and cheaper than ever before. Able men joined his staff almost weekly. It was understood that Fleetwood now gave all his own time to finance and organization. The trade press spoke solemnly of the new scientific era that he had inaugurated. He began to be slightly known even in the daily papers. This holding company was now dubbed "the Trust," and many who had watched its growth with admiration began to fear it. It would be only a matter of years, perhaps months, they said, before it absorbed some of the older houses. They looked forward to the day when everyone in the trade would be Trust employees. The "Trust" looked large, modern, and formidable.

But that was only on paper. Out in the trade, strangely enough, it made little headway. Theoretically, it was impossible to compete with it. Fleetwood's interviews in the trade press demonstrated that. But actually, when it came to quoting prices and delivering goods, matters seemed to stand pretty much as they had always stood. The best orders went to John Squire's Sons, or to Newman & Olds, and there were always enough left for the smaller firms.

The man who first fathomed the Trust's real weakness was the smallest and most insignificant figure in the trade. Nobody could have been more insignificant than Simon Oppenheimer. Everybody knew where he had started — as errand boy at Squire's. He was a stumpy little Hebrew with coal-black hair, round face covered with fiery-red bristles, and hands that could not be trained to keep quiet when he talked. He was neither a mystery nor a heaven-born genius. John Squire, 3d, once said, dryly, that Simon had never stumbled on anything like an original idea in all his life, and that his whole success had been built on a single second-hand idea that nobody else wanted. In his three-dollar job at Squire's he picked up something of business methods. Then he became a city salesman for Newman & Olds, and from this evolved into a petty jobber, dealing with retailers of small turnover and doubtful credit. Then he found his idea and made it the basis

of a line of his own. It was a very tiny, worn-out idea, involving some slight variations in packing. Perhaps a dozen houses had taken it up for investigation from time to time, and then dropped it again.

Far from being spectacular, Simon Oppenheimer's start was even a bit squalid. He and his wife and his brother-in-law worked nights packing the first goods, which probably smelled of garlic. There was no sudden rise to bigger things. For several years this line made no impression on the trade. As fast as Simon turned out merchandise it seemed to disappear underground in the obscure channels of petty retailing. There came a time, however, when Squire's salesmen and those of Newman & Olds found that Oppenheimer's line was growing. It was not big enough to crush, but it was very solid. His prices were a shade lower than any other firm's. The quality was a trifle superior to anything thus far packed at the price. It was a line that any merchant could get along without. It was a line that any merchant might as well have as another. It carried a little extra profit for the merchant. And it was defended vigorously, promoted artfully, and pushed into competitor's weak corners with all the earnestness of a desperate little Hebrew who had nothing else in the world to occupy his time or his thoughts. So it made headway against houses that had a hundred other lines, and five hundred the turnover; and the bigger they were, the less able were they to divert the modicum of energy that, applied in the right place and all at once, might have put Simon Oppenheimer out of business.

It was he who first began to make an impression on the Trust. He had the supreme hardihood to proceed upon the assumption that the Trust was never going to materialize.

The Trust was creating new demand, beyond doubt. But it was also big and unwieldy, and had to explain that its organization was rapidly being perfected, and to ask people to be patient. Oppenheimer was little. With his hat, his samples, and a kiss from his wife, he was organized. Instead of asking you to be patient, he quoted a spot price for spot delivery. Where his line went it stayed, and before the Trust collapsed his business had grown amazingly.

The failure of the Trust is still remembered, of course — the greatest scandal ever known in that trade. Yet Fleetwood's ideas were not all unsound. Many of them came near succeeding despite handicaps, and will unquestionably be taken up again and successfully applied by other men. But Fleetwood lacked specific gravity. The Trust disappeared in a rosy cloud of greater preparations for a vast future, and the details of how new companies were floated to bolster up previous ones is still an unsavory memory. There were several bidders for the assets and good will, John Squire leading, pressed by the Newman & Olds syndicate. But an unknown bidder carried the property over their offers and bought it in for an unknown principal. The latter's identity was not revealed for some days. Then he proved to be Simon Oppenheimer.

The Fleetwoods of business policy try, like Napoleon, to make their army on the march. But they rarely accomplish it. They are Napoleon in Russia.

The Simon Oppenheimers follow that other Napoleonic tactic of striking with all the energy of a small force on the weakest point of a greatly superior adversary. And it seldom fails. They are Napoleons in Italy.

A little business on a sound basis is better, particularly if hard times occur, than the largest consolidation without that basis.

A PLAN FOR GRADING UNION LABOR

BY

FRANK JERMIN AND FENTON H. DUFF

ONE of the most effective arguments against a uniform scale of wages is that it gives workmen of moderate proficiency the same rewards that accrue to the best workmen. Some manufacturers, otherwise favorable to the unions, insist on the open shop for this one reason.

In cities where unions are strong, an employer who needs additional help is expected to apply to the local union for it. If any

union men are available in times of scarcity of labor, they are likely to be inferior workmen and the employer suffers. It is true that some employers classify their men, but this plan is looked upon with suspicion by the unions. It would be much better, from the standpoint of organized labor, to have the grading done within the unions. The adoption of this remedy is as certain as the continuance of the unions. The only question is whether the unions will grasp the immense advantage of taking the initiative or will wait until disintegration forces them to classify their members.

The adoption of some system of grading will become a necessity. The members of each particular union will be divided into at least three classes — the tests of efficiency being length of time engaged in the trade, skill in the performance of work, and rapidity of execution. This last is a sore point with many union men, but it cannot be omitted from the list of qualities that make a first-class workman. Whether the grading could be better done by a committee from each local union or by persons whose duty it should be to travel from place to place and devote their entire time to the work, could be determined by a trial of each method. Possibly the best way would be some combination of the two plans.

Employers who desired men belonging only to what might be called "Class A," and who were willing to pay the highest wages to obtain such men, would then feel that they were getting what they paid for. Those content to get along with less efficient employees would not be compelled to pay the highest scale of wages. That an organization was made up of, say, three classes would not mean that all those in "B" and "C" would be likely to remain inferior workmen, since the apprentice would pass through "C" and "B" before reaching "A." Too much emphasis should not be put upon length of service in these classes: the test should bear heavily on ability. A spirit of emulation would thus be fostered that would be of great benefit to the unions and to the public generally. The possibilities of the development of such a system are almost endless, and the credit of inaugurating and expanding it would give organized labor a prestige that would be worth many years of struggle on the present dead-level of forcing upon employers any union men that have passed their apprenticeship.

Many Government employees are classified, and the classification extends to skilled labor as well as to intellectual occupations. When the head of a department wants a man for a particular service, he knows in which class to look for him. So might the head of a great factory proceed under like circumstances. At present he must depend upon his individual judgment, and has nothing but chance to guide him.

AMONG THE WORLD'S WORKERS

A WOMAN FINDING JOBS FOR THE HANDICAPPED

By MARY L. H. BROOKS

IT WAS a clear, cold, crisp night last winter. I had just succeeded in elbowing my way through the vast throng around the opera house and was in one of those street cars that go clanging up and down Broadway, New York, at a snail's pace, looking out upon the men and women wrapped in sable and in ermine going into the restaurants for a midnight supper. A little farther down the street I was rudely awakened by the sight of a long row of men who were standing in line waiting for their turn to get a cup of coffee or a roll of bread.

Some of them were old, drunken, and worthless looking; some were young and strong, with all the possibilities of a useful life before them. How had they come to join the vast army of the unemployed and the unfed?

So haunted was I by the picture that I concluded to find out what was being done in the way of practical relief. Among the many places I visited was the Charity Organization Society, and there I found a "Bureau for the Handicapped." It seemed to be what I was searching for.

Ranged on the benches were all sorts and conditions of men and women, all unmistakably poor and all so lacking in some requisite that they were termed "handicapped." There I met the tall, fair, self-reliant young woman who has the great responsibility of providing these applicants with work. They all must start life anew, and I wondered what her training could have been to make it possible for her to meet the many problems presented to her each day, and to think of the possible things that these men and women might learn to do, and then to be able to persuade employers that they could do it.

In answer to my inquiries, she said that she could not take time to tell me anything about the department until luncheon. So I took a seat in the corner and saw how she dealt with the applicants themselves.

The first was a delicate man about thirty years of age; he had lost one foot by tuberculosis of the bone, and the other was affected. He had been very successful before this calamity came upon him, but had been ill so long that he had spent his last cent. To add to his misery, his wife was a morphine eater. The young lady wrote all the facts down and assured him that something would be found for him to do.

The next applicant was a *grande dame* who had lost every penny of an ample fortune through mismanagement; and now, at the age of sixty, she must learn to fight the battle of life. It was suggested that, as she knew nothing particularly well, it might be possible to get her a position as a governess or mother's helper to relieve her immediate needs, and later they would try to think of something better. She was a woman of such good sense that she was willing to do anything to maintain her independence.

Then came a young woman with a fine musical education who had neuritis; she could no longer use her hands and was too nervous to teach. A heart-rending story she told, one which covered the gamut of life's success and sorrow, from the joyous heights of a fêted court-player to the depths of poverty.

The sad procession continued all morning — preachers, actors, workmen of every kind, "bums," and ne'er-do-wells — all handicapped by some misfortune, sometimes of their own making, more often not — all depending upon this young woman to extricate them from their difficulties. They had come to her as a last resort, for this bureau deals only with the unfortunate that other agencies cannot help.

After they had all been interviewed, she gave her notes, which she had been constantly making, to her assistants, whose duty it is to put them into statistical form for future reference and for the committee which has supervision of this work. She then dictated a few letters and was ready to go to luncheon with me.

Her afternoons are spent in visiting employers of various kinds to get them interested in the "handicapped." She somehow convinces an employer that the particular person of whom she is speaking can do that particular kind of work.

About five o'clock, after many visits to men of large interests, she said that we must hurry to the East Side, as she had an engagement with the president and secretary of a labor union. She had been trying to have them reinstate a "scab," an Italian workman, who was in a desperate condition and said that he could not understand why he had been turned out of the union. He had joined the first month he was in America. He was then well-to-do, with $500 in the bank, but he was persuaded by another Italian to join a colony in Tennessee and lost his money. He drifted back to New York during a strike. Being without money, with a sick wife and baby, he had deserted the union and worked as a "scab"; but when the union won he was thrown out of a job. For weeks he had tried to get work, but could not. Now his last cent was gone, and he had come to Miss Belyea's Bureau for the Handicapped.

When we arrived at the place where she had been asked to call, we found that it was a basement saloon. Miss Belyea started to enter. I insisted that I could not go with her, but she laughed and said that it was all right, that the men were her friends. The room was full of workingmen of many nationalities. The atmosphere was redolent of the fumes of cheap tobacco, the glasses were clinking, and the orchestra was playing wildly. Before I was able to realize it, we were in a corner behind the bar, in conference with the officers of the union. The men in the saloon, with but few exceptions, went on singing, drinking, and playing, taking no notice of us.

These leaders had all the data about the

Italian. They said they had sent man after man who could speak his language to try to persuade him to be loyal to his union; but that he would not listen. The officers called one witness after another in proof of this, and asked these men to tell us how many hours a day they had worked before the strike and how they had lived on a pittance during the strike while this Italian was earning $18 a week. And now that they had won, this Italian wanted all the benefits of their victory.

The argument continued for an hour and a half, until the arrival of the walking delegate, who had charge of this particular case. The president of the union was a German, the secretary was an Italian, and the walking delegate was an Irishman. He came in with a flourish, lifted his hands, and said: "Stop the music — in respect to the ladies!" Everything quieted down instantly. Then, in a voice unnecessarily loud, he proceeded to defend the union's action, and he was a born orator. The officers finally agreed to reinstate the "scab" if he could pass the examinations and if the union would consent, but they said that they could never forget that he had been a traitor.

As we were leaving, the walking delegate offered us a drink of hot milk. This we declined, but it showed his kindly spirit.

Thus ended my day — it was really far into the night — with the head of the Bureau for the Handicapped. But, for her, the morrow would bring another row of helpless applicants, and another round of visits in their behalf.

ABOUT SOME GOOD READING

THE story of a journalist's trip down the west coast of South America from Panama to the Straits of Magellan is told in "Between the Andes and the Ocean." The author, Mr. William E. Curtis, is a special writer for the *Chicago Record-Herald* and has written so interestingly that several series of his articles have been subsequently published in book form. True to his newspaper training, Mr. Curtis kept eye and ear alert for "a story"; he has, therefore, incorporated interesting accounts of events and persons along with the usual descriptions and solid economic facts. Page for page, the book is neither better nor worse than the average book about South America, but it has the merit of containing about four times as much material. (Duffield & Co. $2.50.)

THE story of a most interesting people is told in "Poland; the Knight Among Nations," by Mr. Louis E. Van Norman. The book does not attempt to give an exhaustive history; a large portion is devoted to a picture of the people of whom Americans in general have an erroneous conception. The author's travels and residence in Poland, and his close association with cultivated Poles in this country and abroad, give him a standing of authority on the particular subject he treats. (Fleming H. Revell Co. $1.50 net.)

IN "The King Over the Water," Miss Agnes Shield and Mr. Andrew Lang have gone courageously to work to rehabilitate in the popular mind the character of "The Old Pretender." Save for a few words in the preface, they do not attempt categorically to disprove the allegations of Thackeray concerning their subject, his sins of omission and of commission, but they very carefully and studiously erect a stable edifice of dignified and sober character for James III., compiled from personal letters, contemporary expressions of opinion, and examinations into the acknowledged traits of his forbears. The result is presented in an interesting and scholarly fashion and with a quiet convincingness that should be sufficient to convert any reader save the most rabid of modern Whigs. (Longmans, Green & Co. $4.20.)

LORD ACTON'S Essays, though they are but the chips from the workshop, give ground for his reputation for omniscience. The little paper on the "Causes of the Franco-Prussian War" alone contains enough secret history to have made the fortune of a diplomatic spy, and it shows, what memoirs and secret histories so uniformly lack, the historian's sense of values and the statesman's grasp of a situation. (The Macmillan Company. New York. $2.50 net.)

It is well to have beside these fragments a substantial part of Lord Acton's chief contribution to history. The "Cambridge History," which he planned, is comparable to the Assouan Dam or the Canadian Pacific Railway. It is a stupendous undertaking which called for a constructive genius to design it and the highest skill of many trained specialists working in perfect harmony to complete it. In short, it is the most notable achievement of literary coöperation now being made. Every volume is a library. Vols. IV. and V., now published, form a library upon the history of Europe for the century and a half from the beginning of the Thirty Years War to the end of the era of Louis XIV. greater in extent and in the number of historians engaged than any but special foundations could until now afford, yet harmonized and unified by a consistent editorial plan. (The Macmillan Company. New York. $4.00 net per vol.)

THE example set by the "Cambridge Modern History" has already been followed in the field of literature. The first volume is issued of a "Cambridge History of English Literature" which, under the joint editorship of A. W. Ward and A. R. Waller, and with the active aid of a considerable group of scholars, proposes to survey the whole field of English literature. The first volume begins in that shadowy time when the Venerable Bede, King Alfred, and Geoffrey of Monmouth wrote, and comes down to the age of Chaucer. (G. P. Putnam's Sons. New York. $2.50 net.)

AS THE life of a man of energy, the book by Francis Arthur Jones about Mr. Edison has its place. It is full of incident and recalls those old favorites with boys, "From Log Cabin to White House," and its clan. It is chiefly as a record of effort and achievement that the book is valuable, for it is too much to expect that a biographer who writes in the presence, as it were, of his hero should assume the critic. (Thos. Y. Crowell & Co. New York. $2.00 net.)

A BIRD'S-EYE view of the whole human race is what the reader gets from "The World's Peoples." Dr. A. H. Keane, the author, has combined extensive travel and scientific attainments with industrious literary habits in the production of a number of useful books. Fortunately, the scope of this volume admitted only proved facts; we are, therefore, spared heated discussions and scientific disquisitions that are both exhaustive and exhausting. The lavish use of photographs — one on nearly every page — adds much to the book's usefulness. (G. P. Putnam's Sons. New York. $2.00 net.)

THE feeling between England and Germany, which has at times threatened to blaze up into full-blown anger and end in war, still exists. Publicists in both countries continue to expound the reasons for antagonism. From an English point of view, the whole matter is put very vigorously and not unconvincingly by Mr. J. Ellis Barker in his "Modern Germany, Her Political and Economic Problems," a revised and greatly enlarged edition of an earlier work. (E. P. Dutton & Co. New York. $3.00 net.)

ACCORDING to President Roosevelt, the late Jeremiah Curtin's "The Mongols: A History" contains "a remarkable array of facts not elsewhere accessible." It is less a book for the general reader than for the special student of history, for the author assumes a great deal of minute knowledge on the part of him who would obtain full value from the information it contains. It is certain, however, that even though the layman may not be able to get a comprehensive grasp of the whole subject from this exhaustive study, he cannot fail to perceive more clearly than ever before the immense significance of the Mongolian peoples in the history of the Eastern Hemisphere. (Little, Brown & Co. $3.00 net.)

NOT in vain has the author of "Confessio Medici" read his Sir Thomas Browne and the biographies of Ambroise Paré. The book is the confession of faith of a man who has worked hard and earnestly at his profession and has yet found time to cultivate a most companionable habit of thought and style of writing. Divided into what is apparently a series of talks addressed to young medical students, it makes no less delightful and helpful reading for everyone than for young men about to enter the hazardous career of a practising physician or surgeon. (The Macmillan Company. New York. $1.25 net.)

IN THE volume "Railway Enterprise in China," by P. H. Kent, is a real explanation of the greatness of that interesting character, Li Hung Chang. He and the Pe-Chih-Li viceroy, Chang Chih Tung, were the Huntington and Hill of China. They realized, as other Chinamen did not, that the economics of a country depends on its railroads. The story of the versatility and perseverance of early foreign attempts at railroad building is not less interesting. And both stories show vital parts which the railroads have played in politics, intrigue, and war. Mr. Kent's book, although limited in subject, is more valuable for an understanding of the Chinese situation than almost any that go under more pretentious title. (Imported by Longmans, Green & Co. $3.50 net.)

THE cost of bigotry was never more plainly exposed than in Henry C. Lea's "The Inquisition in the Spanish Dependencies," which is a record of blind folly and waste such as history can hardly duplicate in its whole length. Those of us who recall our youthful impatience at reading of the intolerance and cruelty of the Inquisition, which then seemed to be beyond punishment, may take a philosophic satisfaction in seeing how complete a poetic justice time has worked out. Sicily, Naples, Sardinia, Milan, the Canaries, Mexico, Peru, New Granada were the Spanish dependencies in which the Inquisition operated. Not one now remains to the Spanish crown, and all were brought to the brink of economic ruin before they left Spanish hands. (The Macmillan Company. New York. $2.50 net.)

THERE is so much darkness and subterranean mystery about Russian affairs, as viewed by the Western world, that any new light cast into those political shadows should be welcomed. The "Memoirs of a Russian Governor," by Prince Serge Dmitrigevich Urussov, translated from the Russian and edited by Herman Rosenthal, is very largely a lifting of the veil from Russian officialdom and bureaucracy by a man on the inside. Prince Urussov, the author, has held many offices in Russia, including the governorship of Bessarabia shortly after the massacre of Kishinev. He was also an important member of the Constitutional Democratic party in the first Duma. The memoirs form a highly illuminating narrative. (Harper & Bros. New York. $1.50 net.

THE "Daily Notes of a Trip Around the World" which the editor of the *Atchison Globe* has published have a homely charm. The author took the Atchison, Kansas, measuring rod in hand and went uncompromisingly to work to apply it to the ends of the earth. The result is amusing at times, at times illuminating, and at times — frankly — exasperating. The notes have all the simplicity and colloquial literary form which characterize the news jottings of a Western paper, and the unconscious humor of applying the Kansas standard of morals, manners and customs to China, Burma, India, and Ceylon is always naive if not always funny. (Crane & Co. 2 vols. Topeka, Kan. $2.00.)

A FAIR, unbiased account of Christian Science has been hard to find, and is very welcome—that is to the average reader. Whether Christian Scientists will welcome it depends on how open-minded they are. If partisanship or praise is necessary to them, they will not like it; for Mr. Powell has tried, in "Christian Science, "as he says, "to write a book in which the average man who is outside of Christian Science can find the things he wants to know about its theory and practice." To most readers, who are neither *for* nor *against* Christian Science, the book will be of real value. It gives information candidly, and with sufficient fulness for most purposes; it discusses the aims, the philosophy, the methods, and the achievements of Mrs. Eddy and her followers, and discusses them with courtesy and fairness. This constitutes a real service and makes the book distinctly worth while. (G. P. Putnam's Sons. New York. $1.25 net.)

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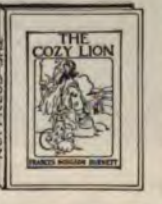

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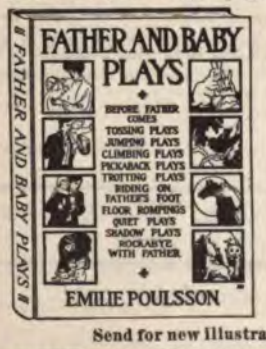

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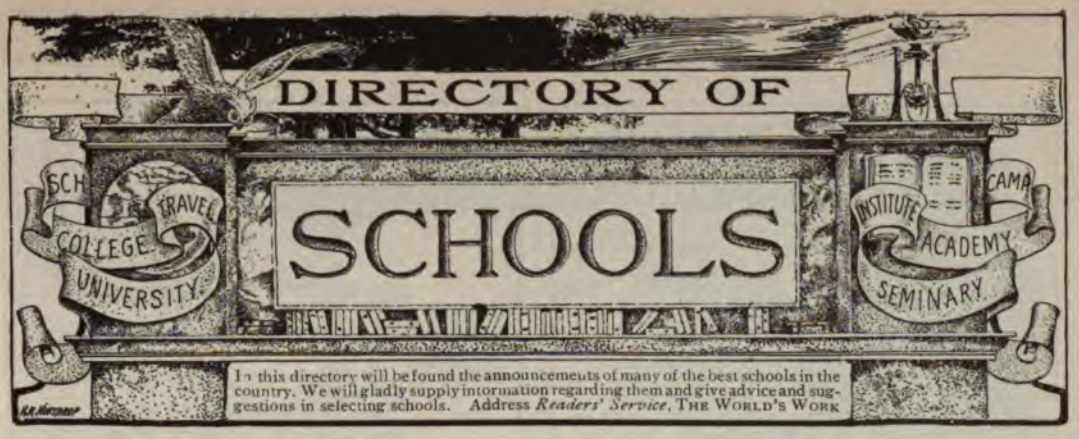

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Remember that in all cases The Country Life Calendar must be asked for when the subscription is sent, and it applies to all subscriptions expiring in November, December or January of this subscription year.

CHRISTMAS PREPARATIONS

As this is being written the final touches are being put on the Christmas issues of all our magazines.

The *Country Life in America* Christmas Annual will be as usual full of color and holiday spirit, and a beautiful feature is planned, and now practically complete, for a *Country Life Calendar for* 1908, printed in delicate colors, exactly the same sort of calendar that one purchases in the stores for a dollar or more. It will be a part of the December issue, and we think will find a warm welcome.

The Garden Magazine—Farming will also celebrate and will publish as a charming feature the story of the beginning of the New York Flower Mission, by Jacob A. Riis.

Therefore we say that this is a good time to take advantage of our offer to join the Five Dollar Bill Club, all of Doubleday, Page & Company's magazines for a $5 note.

The three magazines are offered in the Five-Dollar Bill Club because we feel that readers of one will wish to be readers of all. If it seems desirable, however, that the magazines should be sent to different

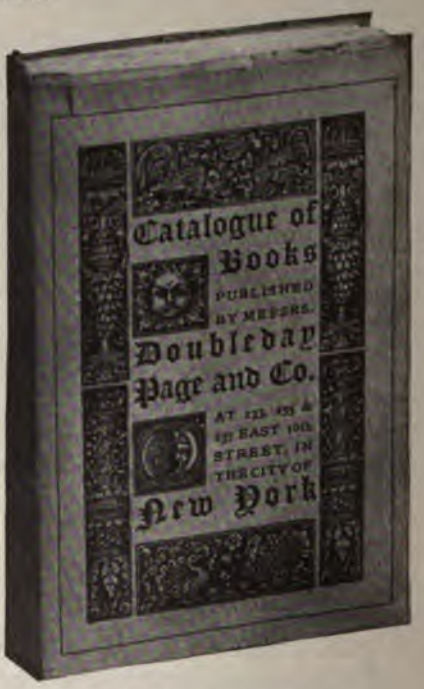
addresses, we are willing to make the change on request. In order to take advantage of this discount the subscriber should mention the Five Dollar Bill Club.

NEWS STAND SUPPLIES

We have many complaints that *The World's Work* cannot be bought at the news stands. The magazine is not returnable and the only certain way to get it through a news stand is to *order* it delivered regularly —or subscribe direct, $3.00 for a full year.

LIBRARY SALESROOM

The publications and pictures of Doubleday, Page & Company can always be seen in the Library Salesroom, on the third floor of our building, 133–137 East 16th Street, New York City. This is a pleasant place to look over pleasing books, and our readers are invited to call, whether they come to make purchases, or to examine our publications.



THE NEW CATALOGUE

It has been a long job, and some of our friends who have written for it must be out of patience waiting, but at last the New Descriptive Catalogue of all Doubleday, Page & Company's books is ready for you, and will be sent on request. We have omitted from its pages all those books of an ephemeral character which no longer live. It is a catalogue of live books, and yet it contains 425 pages.

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SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON, D. C.

Feb. 1, 1907.

HENRY DE NOAILES, ESQ.,
Secretary, the St. Hubert Guild
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Dear Sir:

The set of Voltaire's works illustrating the reproduction of many of the rare and beautifully bound books of the Courts of Europe, made by the St. Hubert Guild of Art Craftsmen, which has been presented to the National Museum in response to my request of December 20th, has arrived safely.

I beg to assure you that the Museum greatly appreciates this generous gift from the Guild and arrangements will at once be made to place the bindings on exhibition in the Division of Graphic Arts, where they will be available for inspection by all who are interested.

Very respectfully yours,

(signed) R. RATHBUN,
Assistant Secretary,
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THE WORLD OF FINANCE

In this department we shall be glad to answer questions relating to investments that seem to be of general interest. We cannot act as a rating agency. Questions of distinctly individual interest we shall reply to by letter, but these are as welcome as those to which the answers will be of wider service. All inquiries should be addressed to The Readers' Service, THE WORLD'S WORK, *New York. All letters must be signed.*

79.—MANHATTAN. *Q.* I am a business woman, earning a good income, and saving money. I have $12,000 which I want to invest in a business-like way, where it has a chance to grow, yet is not likely to be lost. Would you advise investing it in Southern Pacific common stock? If not, what alternative would you suggest?

A. Southern Pacific common at its present prices is an attractive risk for a business man, or for anyone who knows enough about investments not to be alarmed in case of wide fluctuations, possible sharp breaks, the trials of Government prosecution, real or threatened, and the many other vicissitudes that the stockholders of this company and the Union Pacific may encounter. In the long run, the stock will prove valuable. We do not advise it now for a woman's investment.

We much prefer Southern Pacific preferred, Great Northern, Union Pacific preferred, or Pennsylvania. They are all likely to be much slower, in case the market turns strong; but they have a stability that the Southern Pacific common lacks. If you went into Southern Pacific preferred, your investment would give you $700 per annum in dividends, and leave you $1,000 of your capital in the bank, as a starter for a new account.

80.—PITTSBURG. *Q.* Why do you advise against the purchase of Steel stocks at the present time? Do you think there is anything the matter with the steel business?

A. Our advice about caution for the steel stocks was given several months ago, but it is equally pertinent to-day, except that prices of the stocks are lower. Frankly, we believe that the bigger steel mills are now filling orders much faster than the new orders are being received. We therefore look for a recession in earnings in 1908. In part, the check is due to the cessation of railroad buying: but in part it is also due to the fact that U. S. Steel has not wholly satisfied its customers as to the quality of the rails, etc., delivered.

There are several things the matter with the steel business if by that you mean the U. S. Steel corporation. First, it is over-capitalized; second, it has not produced the same quality of goods that its mills produced when independent; third, it has signally failed, in spite of enormous protection and special rates on exports, to make a market abroad in competition with Germany, Belgium, and England. What it may do if the tariff is revised may be left to your imagination.

81.—BROOKLYN. *Q.* I have a block of the 4½% collateral trust bonds of the Interborough Metropolitan, which show me a big loss. Shall I sell them, or hang on? If this company breaks, what do I get for my bonds? Has it any value at all?

A. We advise you to hold your bonds, even though you might get them back cheaper later on if you sold them now. Probably you would not have the courage to buy them at that time. If the Interborough Metropolitan Company is dissolved, either voluntarily or by receivership, it seems to us that these bonds will be worth as much as they ever sold for. They are secured by $500 of the stock of the Subway for each $1,000 of bonds. That stock is extremely valuable. It can easily earn 12% in dividends. If it pays 9%, that pays the interest on your bonds.

82.—MONTREAL. *Q.* What is your opinion of Chicago, Milwaukee & St. Paul Common Stock at the present time? Is there any reason why it should not again sell at its former high price? Is there any other stock which you would recommend in preference?

A. Since the publication of the annual report, we have come to the conclusion that St. Paul common stock is not the kind of investment that we would care to recommend to the conservative investor. The main reasons for this are summarized as follows:

First. An immense amount of new stock has been authorized and issued to carry on the construction of the Pacific Coast Extension. This stock has not been digested by the public, and we see no signs that it will be so digested in the near future.

Second. This Pacific Coast Extension does not appear on the face of it to have the same chance of success that attended the building of the Great Northern, the Northern Pacific, or even the Southern Pacific. It is a very expensive line, and its grades are high, in addition to which it will compete with the Northern Pacific sharply almost its whole length.

Third. There is good reason to believe that three or four of the strongest directors of the company have lost heavily in the market during the past year, and are not now in a position to be of use to the company financially.

Under the circumstances, we should prefer either the Union Pacific, Northern Pacific, or Great Northern, preferred.

83.—ST. PAUL. *Q.* Why is the Canadian Pacific stock, which only pays 6% a year, selling at around 170, while Great Northern, Pennsylvania, Union Pacific, St. Paul, and others of our best 6%, 7%, and even 10% railroad stocks sell below 130?

A. The main reason is probably to be found in the fact that the Canadian Pacific is located in Canada, while the other railroads have been exposed to both Federal and state influences that have seriously affected their stocks during the past year, and which, in all probability, will seriously curtail their earnings during the coming year. As you probably know, the Canadian Railway Commission is a broad-guage affair, which consults the rights of the railroads quite as much as it consults the rights of the people.

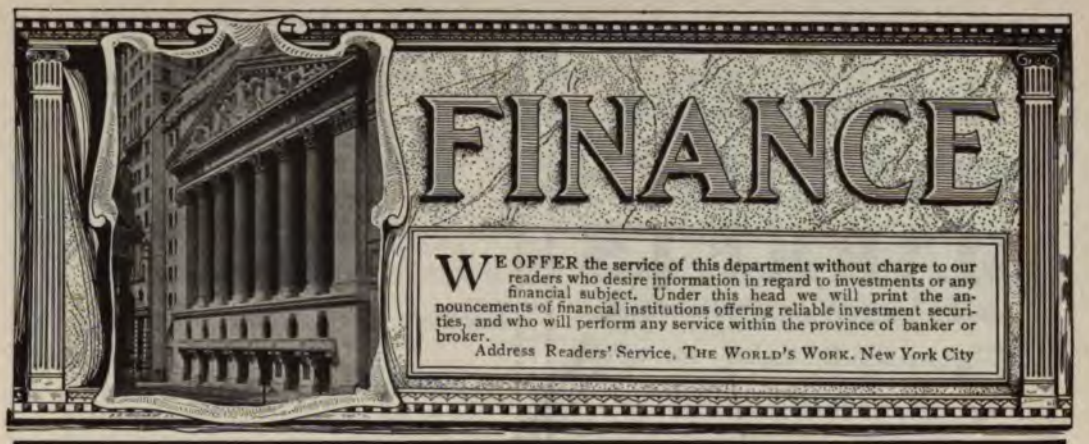
The second reason for the difference between the stocks is to be found in the fact that the Canadian Pacific Stock is almost entirely owned in England and Canada, and has not been shaken out by political and market developments here.

The third reason lies in the fact that an extra dividend of 1% was paid this past year out of land sales. It is understood that this extra dividend will be continued and enlarged as time goes on. Canadian Pacific must be regarded as at least a 7% stock, and not a 6% stock, as you intimate.

84. BOSTON. *Q.* Would you buy a block of Erie notes, payable in April, 1908, and selling at 94½ to 96? I want to have something that matures early in 1908, as I take a holiday in June of that year, and would like a short term investment that will fall due in April.

A. We do not believe that the Erie notes are the right kind of security for you to buy. They are more suitable for a banker than for a private investor. They will be paid unless some form or phase of bankruptcy intervenes but in that case you would have to wait for your money.

Would you not do better to take stronger notes, maturing about the same time? We note that you can get a block of Chicago, Rock Island & Pacific 4½% notes, payable in April, 1908, and yielding 6%. Missouri Pacific is to issue 5's payable in February. The U. S. Rubber Company's 5's are payable in March, and will yield you nearly 7%. We think you would find them more suitable than the Erie notes. If you do not like notes, you can look through the bond list, and find a safe issue of bonds that mature next year, but your banker might have some difficulty in getting an April bond for you, as the market is kept pretty well cleared up of these maturing bonds, which are really bankers' securities more than investors' bonds.



Special Investment Circulars

We shall be glad to send to the readers of this magazine any of the following investment circulars. We request that in writing for any of these circulars the numbers be designated. This will insure the prompt forwarding of the circulars by us, and will make it certain that each individual receives exactly what he asks for.

Listed Railroad Bonds
(No. 32)

This circular describes 12 Railroad Bonds listed upon the New York Stock Exchange. We have arranged these bonds into four groups, beginning with those that are suitable investments for persons dependent upon income, and concluding with semi-speculative bonds. We also give the high and low prices since January 1, 1906.

Convertible Bonds
(No. 31)

Many well-informed investors are not familiar with all of the details covering this form of investment. The 4th Edition of our 8-page circular explains these details, and describes practically all of the Convertible Bonds now upon the market.

Short Term Notes
(No. 39)

Our 10-page circular (9th Edition) describes practically all of the Short Term Notes now upon the market. We furnish also a list of quotations giving the approximate prices at which some of the more attractive issues are now selling.

We desire to state that it is our policy, based upon many years' experience, to give the same prompt and careful attention to a $1,000 investment as to a $50,000 investment.

Spencer Trask & Co.

Investment Bankers,

William and Pine Streets, New York.

Position of the SECURITIES MARKETS

QUALIFIED experts are agreed that the present position of the investment securities markets affords a better opportunity to advantageously purchase high-grade bonds than for several years past, and an opportunity not likely to occur again for several years to come.

It is a fact that at this time—owing to existing monetary conditions—most of the high-grade investment issues may be purchased from 5% to 15% **CHEAPER** than heretofore, while it is easily demonstrable that nearly all of these same securities are actually **SAFER,** to-day, than ever before.

In conformity with the present low range of prices, we offer seasoned Municipal, Railroad and Public Utility Bonds and Notes of the highest investment character to yield from

4% to 7%

—securities which we can recommend for their safety and marketability—available in denominations of $500, $1,000 and $5,000.

Investors are invited to address our nearest office for suitable offerings. We will include a comprehensive pamphlet entitled "Position of the Securities Markets," being reprint of an article from the North American Review.

Ask for pamphlet F-8 and state amount available for investment.

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Lake Shore Gold 4's, 1931
Delaware and Hudson Gold 4 1-2's, 1922

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Circular No. 608. Price to net 5%.

$10,000 COEUR D'ALENE & SPOKANE RAILWAY COMPANY, Ltd.
Total issue $500,000: Secured on all the properties of the Company, including 34 miles of main track, built at a cost of $27,000 per mile and bonded at the very conservative rate of $14,700 per mile. Earnings amount to many times the interest charges of this bond issue.
Circular No. 522. Price to net 5%.

$10,000 CALIFORNIA-WESTERN RAILROAD & NAVIGATION COMPANY.
Original issue $445,000: Already paid off under our serial plan, $41,000. Security consisting of timber lands, railroad, wharf and equipment, conservatively valued at $1,457,000. Payment of principal and interest guaranteed by $5,000,000 corporation.
Circular No. 605. Price to net 5½%.

$100,000 J. I. CASE THRESHING MACHINE COMPANY.
Total issue $3,500,000: Total assets of Company about $12,000,000. Average annual income for the last five years $887,900. The company has pledged to the Trustees as additional collateral, good secured notes and bills receivable equal to one and one-half times the amount of the bonded debt.
Circular No. 600. Price to net 5½%.

$30,000 ILLINOIS MIDLAND COAL COMPANY
Total issue $800,000: Secured by operating coal mines and over 40,000 acres of "No. 5 Illinois Vein" coal, valued conservatively at $2,600,000. Company has ten-year contract for sale of large portion of its product to Chicago Edison Co., Commonwealth Electric Co., and Peabody Coal Co. **at an assured profit.** Sinking fund at 5 cents per ton on basis of tonnage owned is sufficient to pay off the bonded debt **12 times over.**
Circular No. 578. Price to net 6%.

$20,000 WELLMAN-SEAVER-MORGAN COMPANY.
Original issue $1,100,000: Already paid off under our serial plan $140,000. The company's net assets have been valued at about 3½ times the amount of the bonds.
Circular No. 553. Price to net 6%.

$25,000 SOUTH CHICAGO LAND & DOCKS.
Total issue $225,000: Secured on about 40 acres of dock property on the 20-foot channel of the Calumet River, valued by us at over $600,000. Payment of interest and taxes protected by deposit with the Trustee of high-grade listed railroad bonds.
Circular No. 602. Price to net 6%.

$50,000 CLEVELAND FURNACE COMPANY
Total issue $900,000: Secured on all the properties of the Company, whose net assets to secure this bond issue are $2,732,000. Earnings for the past year, with only half the Company's plant in operation, were $452,261, or over six times the average annual requirements for both principal and interest.
Circular No. 604: Price to net 6%.

Circulars and full information supplied promptly on request.

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Absolute security is further insured by charter restrictions which compel the maintenance of paid-in capital and quick assets amounting to not less than 40% in excess of bonded obligations. These bonds combine

Security—Income—Cash Availability

and are particularly desirable for investors seeking an absolutely safe investment unaffected by Wall St. manipulation. Issued in denominations of $100, $500 and $1000. Prospectus on request **Address Dept. R,**

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Buy New York City Real Estate

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Enormous increase in population and unprecedented improvements in transit facilities are making values advance with a rapidity that transforms modest investments, properly placed, into splendid competences.

We are not offering suburban lots or plots having a more or less speculative value, but highly improved property in a highly restricted residential section of New York City; an asset that can be immediately realized upon at any time. We convey all property with

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Our properties are situated on main lines of rapid transit and are bound to realize the natural enhancement in value which must necessarily result from the program of immense transit improvements now building. Improvements include Macadamized streets, Cement sidewalks, Water, Gas, Electricity, and 100 feet wide Boulevards with shade trees and shrubbery. For maps, terms, etc., address Realty Dept. R,

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TAX BONDS

issued by Counties, Cities, Villages, etc., for improvements, such as drains, sewers, public buildings, etc. Our offerings are numerous and include such bonds

Yielding 5% to 6%

Good, safe $500 and $1000 bonds like these: Harrison Co. and Worth Co., Iowa (Drain Bonds), Bates and Chariton Co., Mo. (Drain Bonds), El Dorado and Fayetteville, Ark. (School Bonds.)

Taxes are uniformly paid—avoid securities of changeable value, dependable on corporate management or degrees of general prosperity.

Present conditions afford you exceptional opportunities to purchase securities of the

Great Central West At Decided Bargains

Our customers buying of us by mail in twenty-two States are all satisfied.

Send **your** name for our mailing list.

References everywhere.

WILLIAM R. COMPTON COMPANY
16 Wardell Bldg. Macon, Mo.

No Mining or Oil Advertisements In The World's Work

We believe mining and oil stocks are speculative in the highest degree and we have no advertising space to sell to those offering them. This is doubtless one of the reasons why THE WORLD'S WORK gives such good results to advertisers offering bonds and other investment securities.

United States of America

5% and 6%

CITY COUNTY SCHOOL BONDS

Municipal Bonds are at present selling at low prices and yielding excellent rates to the investor.

We offer the following carefully selected issues which we own and have on hand:

$125,000 Bristol, Tennessee 5%
100,000 Bates County, Missouri %
35,000 Appanoose County, Iowa 6%
35,000 Butler County, Missouri 6%
25,000 Cass County, North Dakota 6%

The above bonds are issued in various denominations from $147.00 to $1000.00. The income from some of these issues is more than five per cent.

Write for further particulars.

The New First National Bank,
Dept. "B." Columbus, Ohio

6% BONDS Based On New York Real Estate

Of All Securities—the Best

Our 6% Gold Bonds are secured by First Mortgages on **New York Real Estate**, deposited with the **Windsor Trust Company, Trustee.** They provide an investment which can be realized upon at any time and which pays a high net rate of interest. Your savings can be invested with all the advantages of a savings bank account and in amounts of

FIVE DOLLARS AND UP

Subject to withdrawal at any time.

For the large or small investor our **6% First Mortgage Bonds** combine the three essentials of the perfect investment: Absolute Security, High Earning Power, Cash Availability.

Write for our booklet. It explains how you can stop that loss of from 1-4 to 2-3 on your interest earnings.

New York Central Realty Company
Suite 1717, 1133 Broadway, New York
(Surplus and undivided profits, $1,000,000)

THE FAME OF
TOM L. JOHNSON

President of this bank, as an earnest worker for the interests of the whole people is world-wide. Few men are better known and the efforts of none are more appreciated. In organizing this bank we enlisted the personal and financial co-operation of Mr. Johnson upon the understanding that it should be a bank *for "the people"* rather than for the benefit of a few capitalists.

It is particularly gratifying that we are able to present our

BANK MONEY ORDER PLAN

the most *perfect* method ever devised for handling accounts from depositors *anywhere* in the world. When you send money to us for deposit, we issue to you, instead of the old clumsy "pass-book," with its dangerous and inconvenient features, our Bank Money Orders. They show, on their face, the amount of principal and interest—you know what it is at a glance, without figuring. They are *Certified Checks* on this Bank, the *safest* known form of commercial paper. You *keep* them and when you *need* money,

YOU CAN HAVE THESE BANK MONEY ORDERS CASHED INSTANTLY—ANYWHERE

with interest at 4%. The plan is ideal—your money is *always* on deposit, yet you have it *constantly in hand* ready for *instant* use in time of need.

Deposits accepted for any sum from $1.00 up, and from the moment your money reaches us it draws

4% INTEREST

If you have money on deposit *anywhere*, or if you contemplate opening a savings account, you *owe* it to *yourself* and those dependent upon you to *investigate* this remarkably convenient and safe method.

Write for booklet "I" *today*, or send us your deposit and we will at once mail you BANK MONEY ORDERS for the full amount. The booklet is free—write for it now.

THE DEPOSITORS SAVINGS & TRUST CO.
Tom L. Johnson, President
CLEVELAND, OHIO.

OF ALL SCENTED SOAPS PEARS' OTTO OF ROSE IS THE BEST
"All rights secured."

CINCINNATI

A CITY OF UNSURPASSED INDUSTRIAL AND COMMERCIAL OPPORTUNITIES

Looming up in the Middle West like a giant among the cities, Greater Cincinnati — the oldest city in the Northwest Territory — has won and held vantage ground as a centre of unsurpassed industrial and commercial opportunities.

It was Cincinnati's ideal location that led to its settlement in 1788. From the source of the Ohio River to its mouth, no better place for a great city could be found than the terraces, rising from the river's edge, upon which Cincinnati stands. Cutting through the hills, and running into the Ohio at right angles, is Millcreek with its wide valley, affording miles of territory for ideal factory sites, as well as easy entrance for the railroads from the North, which unite on the Ohio River front with the score or more roads from the South, East and West.

The beautiful hills which surround the city high above the din of industry, are crowned with thousands of homes — the finest suburbs in the world. Over 8,000 plants, representing in excess of 250 distinct lines of manufacture, are thriving in the heart of a populous center in which, within a radius of ten miles, are gathered no fewer than 550,000 souls — the *actual* census of Cincinnati. Her immediate outlying neighbors in the hill-top suburbs — the most beautiful in the country — as well as the trans-Ohio suburbs are counted to the number of 225,000. No federal census can ever give to Cincinnati all her own, but these people are as much a part of her commercial and industrial life as the 325,000 credited in the 1900 census. Cincinnati, the nearest city to the centre of population in the United States, has within a radius of 600 miles three-fourths of the population of the United States and is the nearest Northern city to the great New South.

CITY OWNS A RAILROAD

In the old days the Ohio River was the only artery of trade which led into the South via the Mississippi. Cincinnati became the recognized gateway to the South as well as

A group of buildings of the University of Cincinnati — the only Municipal University in America

the gateway of the South to the North, when, in the early '80's, she pledged her faith in the future of Dixie-land, by putting her millions into The Cincinnati Southern Railroad, which carries Northern manufactures South and brings back the treasures of the South — hardwood, iron, cotton, tobacco, etc. Cincinnati is the only city in the country that owns a railroad. If sold to-day, the Southern Railway to Chattanooga would realize enough to pay Cincinnati's bonded indebtedness. Leased to the Cincinnati, New Orleans and Texas Pacific Railroad, the rental received is almost sufficient to pay the interest on the city's debt. Her tax rate is one of the lowest in the United States and her financial standing the highest. In times of past financial flurries, Cincinnati has stood a veritable Gibraltar, unshaken by tremors in the world of finance. It is this faith of and in Cincinnatians that has given Cincinnati a record as *the only city in the country* able to sell 3 per cent bonds at a premium.

INDUSTRIAL ADVANTAGES

The success of any industrial enterprise depends upon such all important factors as raw material, fuel, transportation, labor, and nearness to a consuming market. Cincinnati has *all* these advantages to a remarkable degree.

RAW MATERIALS

Out of the South come many of the products which have enabled Cincinnati to gain industrial supremacy. Being the nearest distributing centre of the Southern lumber trade, Cincinnati has become the largest hardwood lumber market in the world. Connecting directly with the iron producing regions of the South, Cincinnati is the natural distributor of this metal. Fully 20 per cent. of the pig-iron produced in the United States is sold by Cincinnati houses.

Cotton is another product that naturally comes into Cincinnati markets. Being closer to the cotton growing section than any other great Northern city, the opportunity for cotton fabric industries in Cincinnati is one that offers itself to investors with a promise of rich reward.

The centre of a great wool producing section, Cincinnati is the ideal location for manufacturers of woolen goods. Cincinnati is a great leather market. Boots, shoes, harness and saddlery are among the flourishing industries. The largest tannery under one roof in the world is located in Cincinnati.

Every kind of paper required in commercial usage is manufactured in or immediately adjacent to Cincinnati. For this reason Cincinnati is the *cheapest* paper market in this country. This accounts for its importance as a publishing, lithographic and printing centre. Many other materials of commercial importance are available in great quantities at minimum cost. Since more than 250 kinds of industries are located here, practically every manufacturer can secure in Cincinnati not only the materials for his product but the factory supplies required in their manufacture.

CHEAP FUEL

The Ohio River *floats* coal from the great Western Pennsylvania and West Virginia mines to Cincinnati at a cost of one thirtieth of a cent per ton per mile — the lowest freigh rate in existence. Manufacturers pay little more than the price at the mine for coal delivered at their furnace doors. Within the past few weeks, natural gas from the great Ohio fields has been piped into Cincinnati. Through The Union Gas & Electric Company the city is able to furnish manufacturers with gas and electric power at lowest possible cost of production.

TRANSPORTATION

Cincinnati has 25 separate and distinct railroad lines, including six trunk lines to the East and four to the South. The manufacturing districts are close to the railroad lines. Wherever there is a factory or a factory site, a railroad line or waterway or both is sure to be close at hand. Belt lines give incalculable value to available territory in the outlying districts.

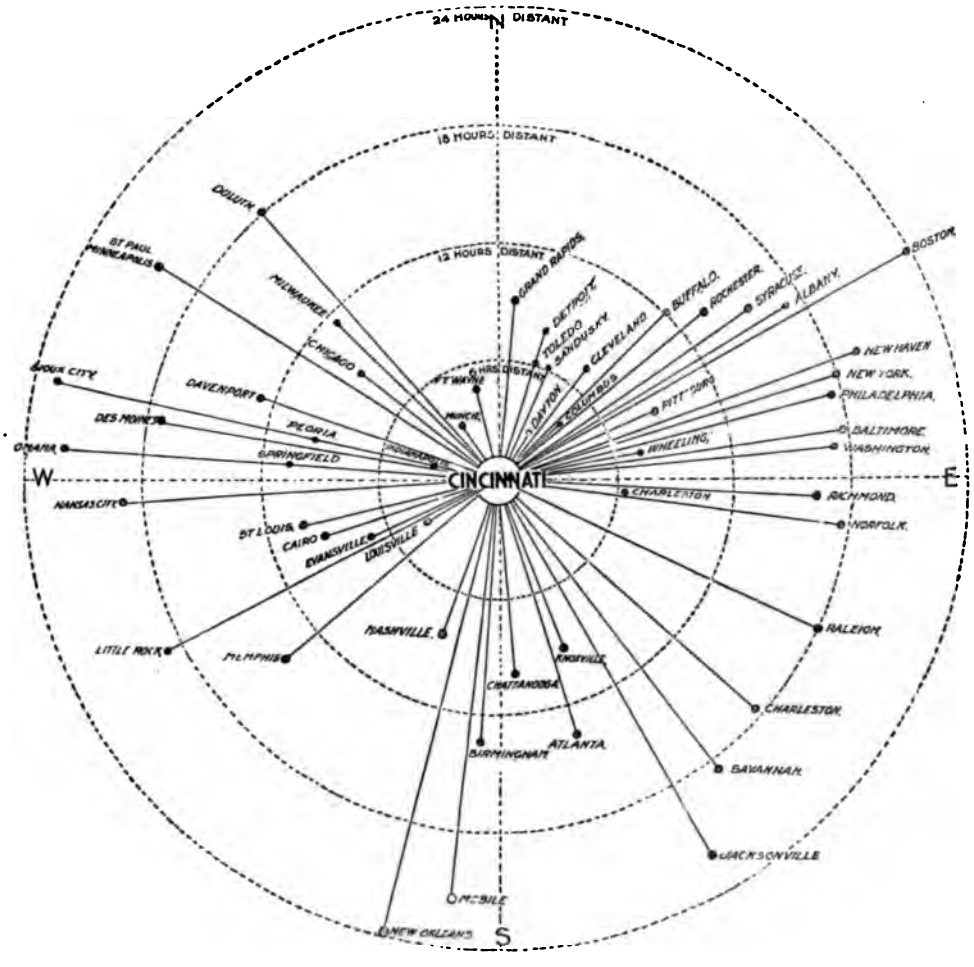
The Ohio River is once more an accepted leader among freight carriers. A water connection with the Mississippi and Gulf of Mexico, the great projected waterway in the Mississippi and the ultimate opening of the Panama Canal will enable Cincinnati manufacturers to ship freight entirely by water to any port in the world. Even now Cincinnati is the *leading inland export city.*

The river is not Cincinnati's only waterway, for connection with the Great Lakes is possible through the Miami Canal connecting with Lake Erie at Toledo.

THE QUESTION OF LABOR

Other cities have had their troubles but labor in Cincinnati is contented labor. Cincinnati offers to the workingman a home-like city, with all possible pleasures and comforts. Her German-American population is the backbone of a thrifty and law abiding, happy people. The city has a smaller foreign born population than almost any industrial community. The economies of living are responsible for reasonable wages that are prevalent. Rents are low and comfortable homes are to be had close to the factories or in the most delightful suburbs on the heights or across the river for a five-cent fare.

Cincinnati's markets are proverbial for their abundance of good things — green vegetables, fat poultry, appetizing fruit, fresh meats and all manner of fish — at prices astonishingly low. The public market places — Sixth, Pearl, Court and Wade Streets — are the Mecca for thousands and therein may be found the secret of contentment in many a home, for the fat of the land is there, to be secured at prices within reason.



More than three-quarters of the population of the United States live within a radius of 600 miles from Cincinnati The above diagram shows the relative distance between Cincinnati and other important cities

The new $10,000,000 Water Works just completed, supplies an abundance of filtered water of perfect clearness and purity.

Cincinnati is a healthy city. The death

Coal is floated down the Ohio River to Cincinnati at a cost of one-third of a mill per ton per mile. The illustration shows a part of a *single fleet* of barges containing 60,000 tons of coal

rate at last computation was but 17.22 per thousand population.

A MUNICIPAL UNIVERSITY

The City of Cincinnati maintains the most complete system of free public schools in the world — a full kindergarten equipment, followed by grammar, intermediate and high school divisions and at the top of the whole, the University of Cincinnati — the oldest municipal university in America. The university comprises colleges of liberal arts, engineering, medicine, law, pedagogy and a school for post-graduates. The graduate school residents of Cincinnati are excused from the tuition fee. Cincinnati's Art Schools and Musical Colleges are internationally known.

CINCINNATI'S MARKET

The world is Cincinnati's market. She sends her products to the ends of the earth. No city is better able to care for the wants of the United States than Cincinnati, for 75% of the white population of Uncle Sam's land is found within a radius of 600 miles of the city. *Cheap raw material and cheap transportation make production cheap* and there is always a market in a populous land for cheaper and better goods. Cincinnati is a city that can offer industrial enterprises raw materials, cheap fuel and power, machine tools of her own manufacture, parts of finished products, contented native born labor, healthful, elevating surroundings and happy homes.

Cincinnati is welcoming new industries, new capital and new people. Investors are invited to look into the advantages of Cincinnati as a manufacturing or commercial centre and a home city. The Cincinnati Industrial Bureau is taking a leading part in this patriotic work of adding to the importance of Ohio's greatest business and manufacturing city. The inducements offered for the transfer of manufacturing plants to Cincinnati are very often irresistible. Upon request, further and complete information on any point relating to Cincinnati will be gladly given by The Cincinnati Industrial Bureau, 515 Union Trust Building.

Will L. Finch
Secretary.

THE CROWNING TRIUMPH OF THE *PIANOLA*

THE MUCH PRIZED SINGING EFFECT AT LAST MADE POSSIBLE BY THE

MARVELOUS NEW *THEMODIST*

WONDERFUL as the Pianola is in its near approach to the best efforts of the human pianist, its makers have nevertheless been unceasing in their efforts to further improve it.

To enable the Pianola performer to single out the vein of melody, or theme of a musical composition, and not only cause it to dominate the accompaniment, but actually to impart to it *the sense of song* or *true cantabile effect:*—this is the goal towards which for almost ten years the greatest board of musical and mechanical experts ever gathered together have been striving.

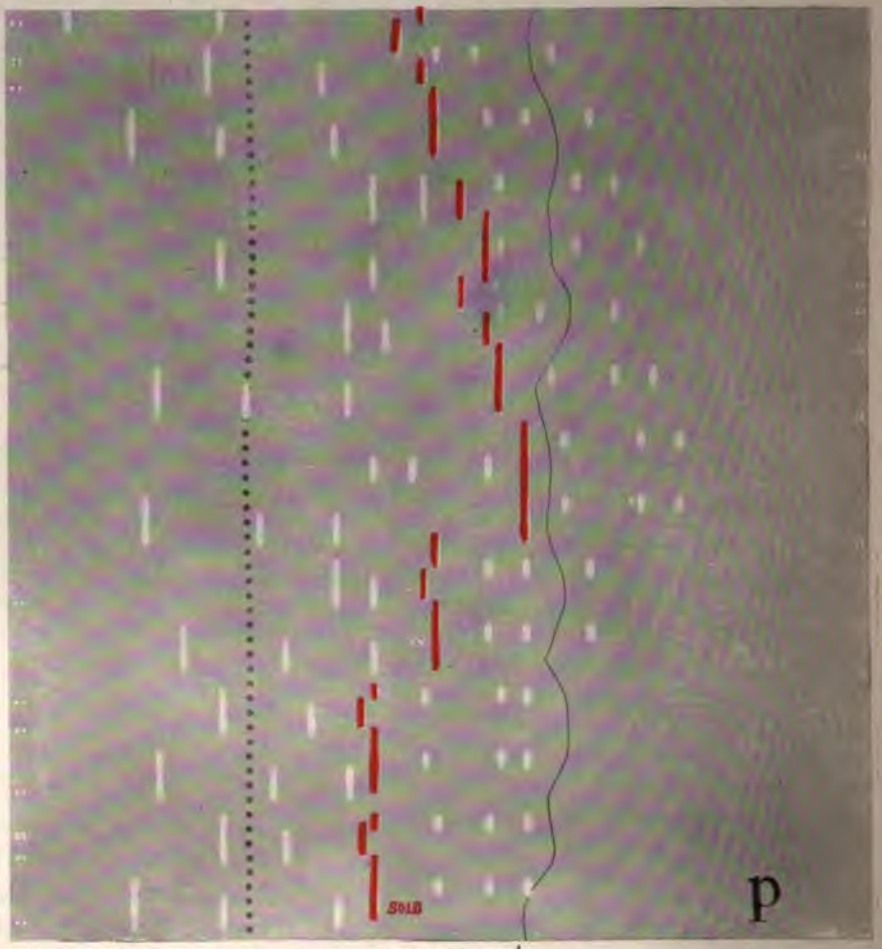
This effect, which is characteristic of the playing of great pianists, has heretofore been lacking in *all* Piano-playing instruments. Its absence has been observed by musicians and it has been freely prophesied that it could never be accomplished other than by the human hands.

[Continued on 4th page]

A VIVID ILLUSTRATION
THEMODIST

Exhibit "A," shown below, is a reproduction of the *Themodist-Marked Music Roll* of Rubinstein's Melody in F. The *Red Notes* are those *accented* by the THEMODIST. Compare these with the *Red Notes* in the *Piano copy* of the same composition (Exhibit "B") and it will be seen at a glance how the THEMODIST *picks out the vein of melody* wherever it may run over the keyboard, making it *stand out in prominence above all other notes*, the degree of accent being entirely at the will of the operator.

The THEMODIST *subordinates* the *accompaniment* (represented by the White Notes), furnishing just the degree of contrast that characterizes the hand-playing of the virtuoso.



Metrostyle Marking

THE RED NOTES ARE THOSE ACCENTED BY THE "THEMODIST"

OF WHAT THE NEW PIANOLA ACCOMPLISHES

Photograph of the Themodist Pianola, in Which the Metrostyle is Also Incorporated

(EXHIBIT B)

The red notes in the Piano copy below correspond to the red notes in the Music Roll (Exhibit A).

MELODY in F

Edited and Fingered by
JOHN SETH

ANTON RUBINSTEIN,
Op. 2,No.1

Moderato

PIANO

* Notes marked thus – show the line of the melody. Ed.

Grade III-IV

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The seemingly impossible *has* come to pass, however:

The THEMODIST has Solved the Problem

This marvelous device actually *simplifies* the playing of the Pianola. With no thought or effort on the player's part, those notes which take the melody are distinctly brought out, no matter where they lie, nor how involved in the accompaniment they may be. Not only does the Themodist cause them to be struck *harder*, but the sense of pressure or firmness is given to them, causing them *to sing*, clear and sustained, as the voice of the soloist above its background of supporting instruments.

The invention of the Themodist takes rank as one of the most important achievements in the history of music. Now, for the first time, the full beauty of a Chopin Nocturne can be portrayed with a Piano-player. The inner voices, heretofore hidden by unduly loud accompaniment, now show the listener the real meaning of the composition.

With the addition of the Themodist, which, like the Metrostyle, is absolutely exclusive, the difference between the Pianola and all other instruments of its nature becomes still more apparent.

The Aeolian Company

362 Fifth Ave.
New York

Send Catalog F and details of your new purchase-plan to

Name_____

Street and Number_____

City_____

It is the fact that the Pianola is the one Piano-player which is universally regarded as THE STANDARD. Its superiority is indicated by its sales throughout the world, which are actually GREATER THAN THOSE OF ALL OTHER PIANO-PLAYERS COMBINED.

Themodist Pianola with Metrostyle, $300

Sold for cash or on monthly payments with interest. Other pianos and piano-players accepted as part payment. The Themodist can also be obtained in the Pianola Piano. Write for complete information about our new instruments and copy of the interesting booklet, "The Fascination of Personally Producing Music."

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Grape-Nuts

contains just the food elements Nature has stored up in wheat and barley, including the Phosphate of Potash which combines, in the blood, with albumen to repair and build up the cells.

It is a concentrated, partially predigested food and is a wonderful sustainer of the active, progressive, successful man. It's food—not medicine.

10 days' experience will prove.

"There's a Reason" for

Grape=Nuts

Postum Cereal Co., Ltd., Battle Creek, Mich., U. S. A.

BY C. ALLAN GILBERT

Old Fashioned Girls By Our Modern Artists

By MARY JANE McCLURE

¶ If you were to attempt to picture your idea of an old-fashioned girl, how would you depict her? Would she have a curl nestling alongside the curve of her neck, tantalizingly tempting her admirers gently to lift it and kiss the soft, pinky-white flesh against which it rests? Would she be a Dolly Varden type, daintily graceful? Would she be a sedate Colonial dame in Quaker bonnet and sober dress? Would she be a Pompadour beauty? Perhaps you will be able to find your ideal amongst the collection of "Old Fashioned Girls" issued by Armour & Company in the form of a Calendar as their 1908 contribution to American art. Five prominent American artists have endeavored to picture their ideals. A. B. Wenzell, C. Allan Gilbert, Henry Hutt, Harrison Fisher and F. S. Manning have succeeded in producing a veritable chef d'Oeuvre. Considered either as a collection or singly, the pictures are pronounced by art connoisseurs to be a valuable addition to the artistic achievements of the year. The manner in which they may be obtained is mentioned below.

¶ A gulf wider than time separates the old-fashioned woman from her twentieth-century sister. Her training was along entirely different lines. Our grandmothers and their grandmothers before them were taught all the intricacies of brewing and baking. There was nothing about the art culinary they did not know how to do. To be sure, they were unfamiliar with the scientific names of food constituents—but—they could cook a meal that would tempt the very gods to drop down from paradise in order to nibble at the flavory, savory combinations they prepared.

¶ The women of today talk glibly about balanced rations. They reel off facts and figures about carbo-

hydrates, proteids, and goodness knows what—but—they do not know enough about practical cookery to prepare the simplest meal.

¶ Necessity ever has been the mother of invention. Nature abhors a vacuum, and because the woman of today does not know how to cook, modern business science has rushed in to aid her. As a consequence, in this day and age foods may be bought ready to serve at a moment's notice, without the necessity of their being cooked by the home chef.

BY A. B. WENZELL

¶ Armour & Company probably have done as much as any other factor in modern progress to provide pure food in handy, palatable form. The women of today are coming to look upon the Armour products as veritable life-savers. They are an ever present help in time of household trouble. With a liberal supply of Armour's Extract of Beef and the other food products they furnish to a hungry, hurried public, the kitchen and dining room ship will be able to weather any culinary storm that may be encountered.

¶ Extract of Beef (especially if it is Armour's) is one of the new-fashioned things that help the untrained woman of today to lighten labor and solve domestic problems. The old-fashioned woman was compelled to boil the very life out of the beef-shin in order to secure the extract of beef. The operation required more than hours—it took days—weary days—hanging over a steaming soup pot skimming and stirring until the soul was boiled out of the woman as well as the shin.

¶ The twentieth-century woman dips a spoon into a tiny jar of Armour's Extract of Beef, stirs it about in the pot containing the other ingredients—and the soup is made. She has the rich, full flavor of the prime beef, all of the exquisite taste without a particle of waste of materials, fuel, labor or time.

¶ The old-fashioned woman knew nothing about the use of beef for flavoring or coloring purposes. She had recourse to black coffee or caramel when she desired to make a dark-colored gravy. The woman of today knows that Armour's Extract of Beef not only colors the gravy, but adds to the intensity of the browned-meat taste.

¶ Armour's Extract of Beef combines so happily with other ingredients used in cooking, especially with milk, cream and cheese, that its uses are manifold. For instance, it will be found to add a coaxing, stomach-thrilling, palate-pleasing relish to stuffed cucumbers. Prepare them this way:

¶ **Stuffed Cucumbers:**—Peel large cucumbers, either green or yellow, the latter preferred. Cut in halves lengthwise and scoop out the seeds. Boil in salted water to which has been added three tablespoonfuls of vinegar, for one minute. Take them out, plunge them into cold water, dry them with a clean cloth and fill the halves with the following mixture: One-half pound of veal, finely chopped; a tablespoonful and a half of butter; a liberal handful of white bread, soaked; two eggs, whites and yolks beaten separately and the whites added last of all; pepper and salt to taste. This stuffing will swell in cooking, and space must be allowed for raisins, in filling the cucumbers. Bind them about carefully, two halves together, with a cord and place them side by side in water that half covers them. Add one-half teaspoonful of Armour's Extract of Beef, one tablespoonful of butter and pepper and salt to taste. Let them simmer slowly for one and one-half hours. When ready to serve, thicken the liquid in which they were boiled to make a gravy which should be poured over them in serving.

BY HENRY HUTT

¶ **The Armour Art Calendar for 1908,** the title of which is "Old Fashioned Girls by Our Modern Artists," may be secured by sending to Armour & Company, Chicago, one of the metal caps from a jar of Armour's Extract of Beef, or twenty-five cents in coin or stamps. With the metal cap four cents in stamps should be sent to pay the postage.

¶ **Art Plate Offer:**—We also have a limited edition of art plates 11x17, with calendar dates and advertising matter eliminated, printed on extra heavy paper suitable for framing or portfolio purposes. Single art plates will be sent upon receipt of 25c or one metal cap from jar of Armour's Extract of Beef. The complete set will be sent for $1.00 or five metal caps.

BY F. S. MANN NG

BY HARRISON FISHER

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Buffalo Lithia Water

Has for Thirty Years been Recognized by the Medical Profession as an Invaluable Remedy in Bright's Disease, Albuminuria of Pregnancy, Renal Calculi, Gout, Rheumatism and all Diseases Dependent upon a Uric Acid Diathesis. Time adds to the Voluminous Testimony of Leading Clinical Observers.

Dr. John V. Shoemaker, M. D., LL. D., *Professor of Materia Medica and Therapeutics in the Medico-Chirurgical College of Philadelphia.* See *Medical Bulletin*, July, 1902. Gives full clinical notes of nine cases of **Albuminuria of Pregnancy** and three cases of **Puerperal Convulsions** in which **BUFFALO LITHIA WATER** was systematically used with gratifying results, and adds: "The habitual use of **BUFFALO LITHIA WATER** by women who are enceinte is a commendable precaution against the occurrence of **Puerperal Convulsions.**"

Dr. Cyrus Edson, A. M., M. D., *Health Commissioner, New York City and State, President Board of Pharmacy, New York City, Examining Physician, Corporation Council, New York City, Etc., writes:* "I have prescribed **BUFFALO LITHIA WATER** with great benefit in **Bright's Disease.**"

Medical testimony of the highest order, attesting the value of this water in the other diseases mentioned, mailed to any address. For sale by grocers and druggists generally.

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Make it a Wonder."
"The Best Policy Ever Handed Down to an Insurance Man."
"Insuring Public Pleased."

This is what Prudential Field Managers say of the

NEW LOW COST POLICY

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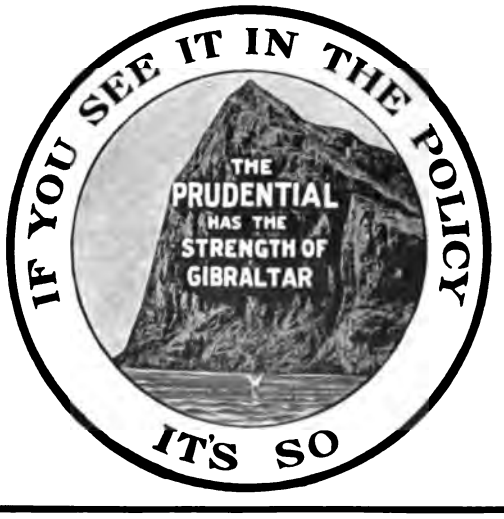

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while your dealer has a variety of patterns to show—but be guided in your purchase by the famous trade mark

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This name represents the best silver plate—patterns of exceptional artistic merit and character, and quality so thoroughly tested for three generations as to well maintain the title

"Silver Plate that Wears"

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ESTABLISHED 1842

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CHOCOLATES and CONFECTIONS.

Whitman's **Instantaneous Chocolate** made instantly with boiling milk.

We appoint one first-class druggist in every locality as our exclusive agent. If there is no agent near you, send us $1.00 by mail and we will send prepaid a box of Whitman's. An exquisite gift.

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Only a few sets remain to be sold at this price. Orders will be filled in order received. Send prepaid by express. Pay $2.00 within 5 days and $2.00 a month if satisfactory otherwise notify us to send for them. It offers the Carpenter, Contractor, Builder, Architect, Draftsman or Mechanic an exceptional chance to advance. The House-Owner or prospective Builder will find it an invaluable aid. The young man wid learn a good trade.

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ENERGY AMBITION PLUCK

11-07 W'ld's W'k

Send set Cyclopedia Architecture, Carpentry and Building for 5 days' free examination. Will pay $19.80 per above terms if satisfactory.

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The Mutual Life Insurance Company of New York has paid more in dividends to policy holders than any other company in the world. Since organization it has returned in dividends over $118,000,000. As a result chiefly of increased earnings and decreased expenses the annual dividends to policy holders this year, on policies issued in 1905, will be 25% to 30% more than in 1906.

The Mutual Life Insurance Company

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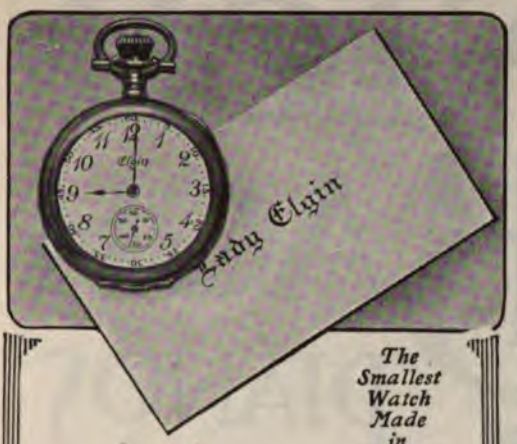

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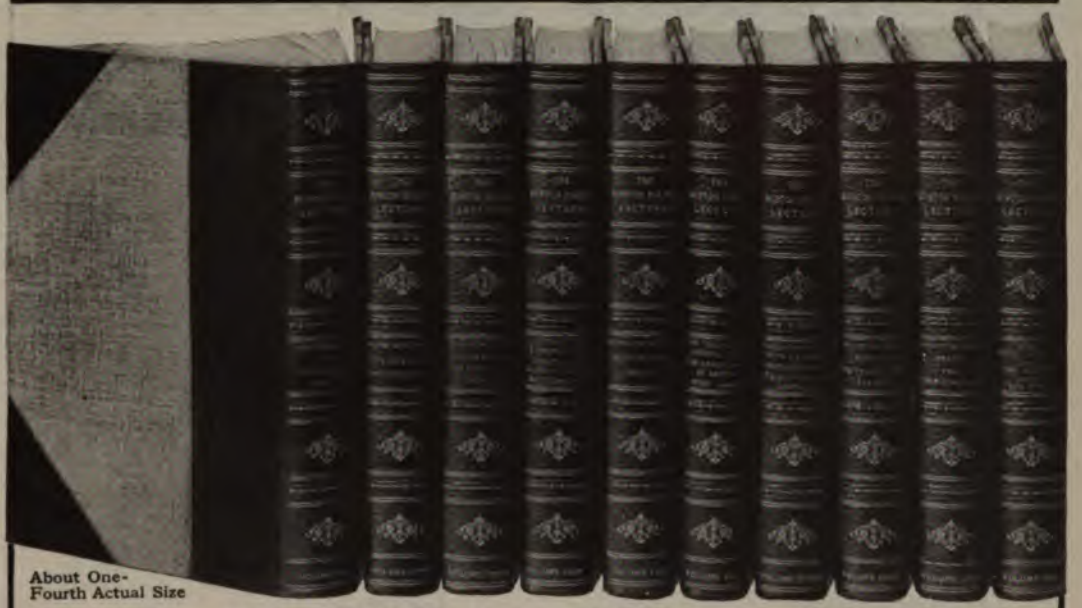

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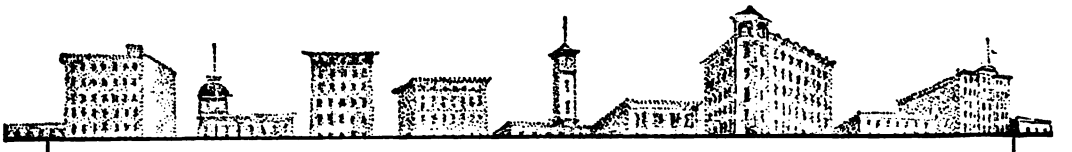

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If you are interested in procuring certain equipment for a particular branch of business make your wants known.

We may have special literature which will interest you, at any rate our suggestions, samples and advice will undoubtedly prove valuable.

Agents for **Globe-Wernicke** filing cabinets sell at catalogue quotations and prices are uniform everywhere.

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Cincinnati.

The largest producers of office filing equipment in the world.

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You want a letter immediately

Your clerk goes to a Shaw-Walker Vertical File, locates the folder instantly.

and delivers it to you like this—"all together."

We guarantee that the Shaw-Walker Vertical File will reduce your labor of filing 1/3 to 1/2—be cheaper in original cost and more compact than any other system not filing the letters vertically.

Much of this great saving is made possible because each drawer is

Full Roller Bearing

not a single little roller to deceive you, but eight large, expensive fibre wheels on steel bearings, two encased in nickeled steel; every point of contact is frictionless; every drawer front reinforced and guaranteed against breaking—lip front to keep out dust and prevent sticking. We couldn't make them more practical.

Send for our book "A Lost Letter"—it's the story of conditions in many offices—the actual experience of one executive. It's free as is also our catalog on Vertical Filing.

SHAW-WALKER

Muskegon, Michigan
Branches at Chicago and New York

IN Office OR Home your Telephone is Always out of the way if you use

The "EQUIPOISE"

TELEPHONE ARM

¶ Can be placed anywhere.
¶ 10 days trial at our expense.
¶ Over 50,000 satisfied users.
¶ Get our booklet at once.

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Makers of Electrical Apparatus
1018 Walnut St., Philadelphia, Pa.

How's Business? DO YOU KNOW? OR DO YOU HAVE TO "ASK THE BOOKKEEPER?"

"THE SILENT AUDITOR"

with two minutes work a day on your part as proprietor keeps you posted as to your business. A private record and can be carried in your pocket or in the private drawer of your desk.

Price, with a year's supply of "Daily Report Cards," $2.00.

The Hatheway-Sheffield Co., 394 Canal St., New York.

A Classified List of Business Helps

This list is published in order to present to readers in a compact and convenient form the names of the makers of the most essential office appliances. The Business Helps Department will gladly furnish detailed information about any of the devices named below or on any subject relating to business methods and management.

ADDRESSING MACHINES

Elliott Addressing Machine Co., 97 Purchase St., Boston, Mass.

BUSINESS SYSTEMATIZERS

Knickerbocker Audit Co., 45 William St., N.

LOOSE LEAF BOOKS

Sieber & Trussell, 4000 Laclede Ave., St. Louis,

KAHN SYSTEM

of Reinforced Concrete

Specify ***Kahn System****—You will if you investigate.*
The United States Government has given substantial endorsement to the ***Kahn System*** *in over 20 buildings erected at West Point, Annapolis and Washington.*

If you plan to build—investigate the practical advantages and economies of the **Kahn System** of construction—absolutely fireproof, eliminates cost of maintenance, reduces insurance, saves time in building, grows in strength and quality with age.

INVESTIGATE—Your interests are greater than ours, your money, your investment is concerned—find out. Know what the **KAHN SYSTEM** of construction means—that it operates in accord with your architect, engineer and contractor without extra cost to you. Why not profit by this combined knowledge and experience.

What the **Kahn System** can do for you depends on your needs—write us giving particulars—it costs nothing to investigate.

(Our Bulletin "A Record of Results" giving names, location, names of architects and contractors of hundreds of **Kahn System** buildings sent on request.)

After thorough investigation the Packard Motor Car Co. of Detroit built their first **Kahn System** building three years ago. Each year new buildings have been added until to-day their "**Kahn System** Plant," here illustrated, embraces upward of ten acres of factory floor space. The Packard Co. give the following reasons for their belief in the **Kahn System** of concrete construction:

View of the **Packard** Automobile Plant—A convincing endorsement of the **Kahn System**

"**First:** You get the best fireproof conditions.

"**Second:** You avoid the delay of waiting for steel and work proceeds immediately and expeditiously and without the disturbance of riveting.

"**Third:** The shop light conditions are much better with the **Kahn System** of concrete construction."

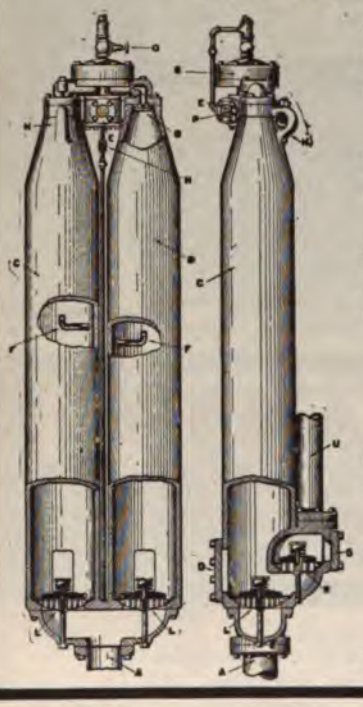
If request is made on your letter head, a copy of "The Typical Factory," an elaborate book describing the Pierce "Factory Behind the Car," will be sent free. Write for copy of "Mills and Factories," and Bulletin No. 5, "What Reinforced Concrete Is."

Trussed Concrete Steel Company

LONDON, ENG. — **600 Trussed Concrete Bldg., DETROIT** — TORONTO, CAN.

BUILD KAHN SYSTEM—*IT STANDS TO REASON.*

THE EMERSON STEAM PUMP



is recognized as the most reliable, efficient and economical in every field where a pump can be used, up to 150 foot lift.

The steam and discharge pipes and the pump are all self contained, and it can be operated in either a suspended or stationary position.

It is not affected by the roughest usage, and has no stuffing boxes, packing glands, belts, pulleys, shafting or priming pipes, and is the ideal pump for long continuous runs.

Air admitted into the suction pipe in large quantities will not stop an EMERSON working.

Water containing gritty material will not damage or harm the Emerson. It is **Weather Proof** and requires little attention.

Write for our catalogue and information concerning our Quick Cleaning Strainers and Foot Valves.

THE EMERSON STEAM PUMP CO.

Offices and Works:

11 PRINCE STREET, ALEXANDRIA, VA., U. S. A.

ODORLESS, SANITARY and INEXPENSIVE destroyer of Garbage and Excrement.

HIGHLY recommended by experts as the modern substitute for out-door closets and garbage cans.

Descriptive booklet and testimonials mailed on application

Address Dept. 2

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¶ A subject vitally important to everyone. Personal health, as well as comfort, is at stake. ¶ Great advance has been made by sanitary science in the methods for home heating, with healthfulness as the first consideration—after that economy. ¶ We are most confident that in our

CAPITOL BOILERS AND RADIATORS

we are nearest the perfect system for satisfactory and economical home heating. We cannot give you the reasons here. We ask you to write for our descriptive, illustrated book **N**, which explains the merits of our methods—gives the reason "why"—makes the appeal to your own experience.

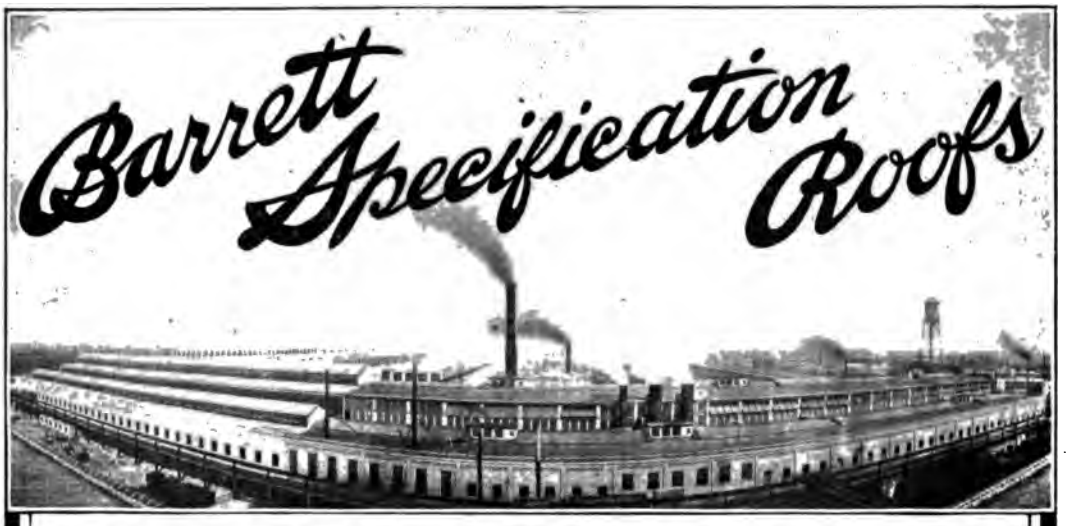
This book is mailed free.

CAPITOL BOILERS and RADIATORS are equally valuable for heating Public Buildings.

United States Heater Company.

DETROIT, MICHIGAN.

Branch Offices and Agencies in all principal cities.



FOR ALL PERMANENT BUILDINGS

IT is significant that Barrett Specification Roofs are almost invariably adopted for buildings with large roof areas such as factories, railroad buildings, etc., where the cost and durability of materials must be carefully considered.

An example of this is the well-known Allis-Chalmers plant, illustrated herewith. All the recently erected buildings carry Barrett Specification Roofs, amounting in all to about 300,000 square feet.

A Barrett Specification Roof in a typical instance (King Phillip Mill, Fall River) was recently renewed after thirty years of service.

Its original cost was less than any style of metal roofing would have been. Tin or sheet iron would have required continual painting, and even then would have been liable to rust and corrode, causing loss by leaks. A ready roofing with its narrow laps and exposed nailing would have been entirely unadapted for use on a building of this type, where the roof is of moderate pitch.

The cost per square foot per year of service in the case of Barrett Specification Roofs is remarkably low; First, because the original cost is always moderate, and second, because the maintenance cost, as a rule, is nothing, as such roofs require no painting or protection of any kind. In the case of the King Phillip Mill, for-instance, the total cost was only about one-fifth of a cent per square foot per year.

Low cost and satisfactory service have made Barrett Specification Roofs more largely used than any other kind.

The Barrett Specifications in pocket edition form will be mailed free on request to anyone interested.

Barrett Manufacturing Co.

New York Chicago Philadelphia Cleveland Cincinnati Minneapolis Boston
St. Louis Allegheny Kansas City New Orleans London, Eng.

THE "BEST" LIGHT

Makes and burns its own gas. Produces 100 to 2,000 candle power light. Brighter than electricity or acetylene and cheaper than kerosene. Saving affected by its use quickly pays for it. Absolutely Safe. No Dirt, Smoke or Odor. Agencies all over the world.

THE "BEST" LIGHT

Is made in over 100 different styles for all purposes, for in and outdoor use, to suit the fancies and pocketbooks of all. Every lamp warranted. More "Best" lamps in use than all other makes combined.

Agents wanted everywhere.
Write for Catalog.
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CANTON,
OHIO.

THE "BEST" LIGHT

If You Want Building Information

Write to the SERVICE DEPARTMENT of **The World's Work.** Our wide experience with building problems and the building trades has given us a valuable fund of information. Advice and help in selecting materials and equipment, etc., will be cheerfully given free of cost.

Address READERS' SERVICE, THE WORLD'S WORK, 133-137 East 16th St., New York.

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Send 15 cents for a 4 months' trial subscription to

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A monthly magazine of 100 pages of the best systems, methods and plans for the book-keeper, auditor, accountant and technical man. Subscription, 50 cents a year.

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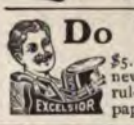

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HARTSHORN SHADE ROLLERS

Bear the script name of Stewart Hartshorn on label.
Get "Improved," no tacks required.

Wood Rollers ***Tin Rollers***

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Is what tiling really means. The tiled **BATHROOM and KITCHEN** is the desire of every householder.

NO-CO-DO STEEL — Our Guarantee

NO-CO-DO STEEL TILING

puts it within the reach of all. For a few dollars you can completely transform your Bathroom, Kitchen, or Laundry into the most modern tiled effect. It has every advantage over all other kinds of tiling—is the most sanitary, durable, and economical material on the market. Easily and quickly applied by **ANY MECHANIC.** Write for prices and booklet.

We also manufacture

NORTHROP STEEL CEILINGS and WALLS

Catalogue furnished on request.

NORTHROP, COBURN & DODGE CO.
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The Readers' Service will gladly furnish information regarding foreign travel

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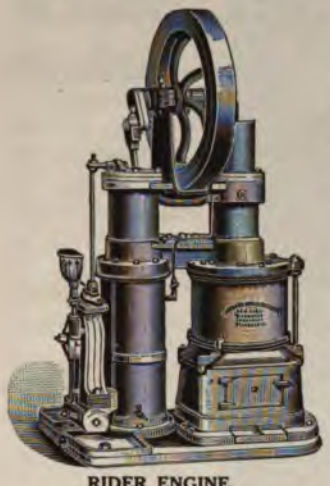


RIDER ENGINE.

Rider-Ericsson Engine Company

begs to announce an important reduction in prices of its Rider and Ericsson Engines, due to greatly improved facilities in their new plant. The introduction of special machinery has not only resulted in the absolute standardization of all parts, but also in decreased costs and we want our customers to share with us in these benefits.

We give below the present as well as the old prices:

OLD PRICES.

	5-inch	6-inch	8-inch	10-inch
Rider Engines -	$210.00	$300.00	$420.00	$540.00
Ericsson Engines	$120.00	$170.00	$210.00	$300.00

NEW PRICES.

	5-inch	6-inch	8-inch	10-inch
Rider Engines -	$180.00	$240.00	$350.00	$460.00
Ericsson Engines	$90.00	$130.00	$160.00	$240.00

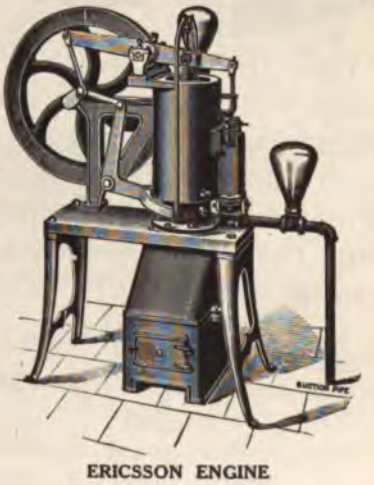
No extra price for deep well attachment.
These prices are f. o. b. New York.

In view of the enormously increased demand, orders should be placed as much in advance of requirements as possible.

For further information apply to our nearest store, asking for catalogue "C 1."

Rider-Ericsson Engine Co.

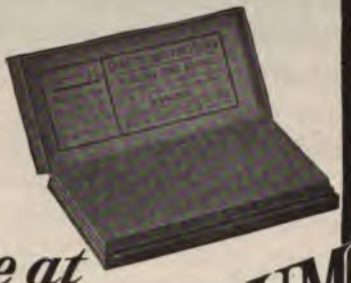
35 Warren St., New York.
40 Dearborn St., Chicago.
239 and 241 Franklin St., Boston.
40 North 7th St., Philadelphia.
22 Pitt St., Sydney, N. S. W., Australia.
234 Craig St., W., Montreal, P. Q.
Amargura 96, Havana, Cuba.



ERICSSON ENGINE

This little Pocket Sharpening Stone by mail 35 cents

If you want a keen, lasting edge on your tools, you'll use Carborundum Sharpening Stones—



Carborundum Razor Hone by mail $1.00

Made at Niagara

CARBORUNDUM

Used the World Over

Carborundum Carpenter's Stone In Aluminum Box by mail $1.50

Made in all sizes and shapes and grits for every sharpening purpose—
Cut faster—last longer—
Put a keener edge on the tool than any other sharpening stones ever made—

Ask your dealer—
Don't take a substitute.
If he doesn't keep Carborundum Stones—Write direct.

THE CARBORUNDUM COMPANY
Niagara Falls, N. Y.

Consider the Effect of Hardware

In planning a home do not overlook the decorative possibilities of the hardware, and do not neglect the opportunity to exercise your own judgment in its selection.

SARGENT'S
ARTISTIC
HARDWARE

offers the widest latitude of choice. Designs are made to harmonize with every style and period of architecture.

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will prove invaluable if you are building or remodeling. Write for it.

If you are interested in Colonial Styles, ask for our Colonial Booklet.

SARGENT & CO.,
154 Leonard Street,
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A Fair Pilot

to skin beauty is the use of good soap and water. *Good* soap is naturally white. If coloring matter or high perfumes are incorporated, they add nothing to the virtue or efficiency of the product—more often they are used to cover up the inferior quality of the raw materials and the greasy smell.

Quality in soap, therefore, does not go hand-in-hand with high prices.

FAIRY SOAP, for instance, sells for 5c a cake. It is just as pure and high grade as any soap can be—contains no free alkali, no coloring matter, no adulterants—it is just soap, pure soap, nothing but the best soap.

Pay any price you will, you can find no more soap merit and purity than are found in FAIRY SOAP the white, oval, floating cake—at 5c.

THE N. K. FAIRBANK COMPANY

Chicago

Fairy Soap was granted highest possible awards at both St. Louis and Portland Expositions.

"Have You a Little 'Fairy' in Your Home?"

Any Sand on the Track?

Do the wheels slip around without making any progress?

The human engine needs fuel that is rich in the proteids—the element that repairs waste tissue and replenishes the energy expended in work or play—to get the right grip on the business of life. If the wheels are slipping around without taking you forward, put sand on the track by eating

Shredded Whole Wheat

a food that is rich in the proteids—the fuel that enables the human body and mind to "do things." It contains all the muscle-making, brain-building elements in the whole wheat grain, made digestible by cooking, shredding and baking.

An ideal summer food—not so heating as corn or oats; contains more nutriment and is more easily digested.

A breakfast of SHREDDED WHEAT BISCUIT will supply the energy for work or play. TRISCUIT is the same as the Biscuit, except that it is compressed into a wafer. It is used as a toast with butter, cheese or marmalades. It is an ideal food for flat-dwellers, light housekeepers, campers, for picnics, for excursions on land or at sea.

"IT'S ALL IN THE SHREDS"

THE NATURAL FOOD CO. Niagara Falls, N. Y.

My razor is the only new idea in razors for over 400 years. It is absolutely safe in its work—uses a thin wafer blade with double edges, which, by a turn of the handle, is adjusted for either a light or close shave.

The "GILLETTE" is always ready—**no honing, no stropping,** and with proper lathering you can shave yourself in three to five minutes any and every morning in the year at a cost of a fraction of a cent per day.

Ask your dealer for the "Gillette" today and shave yourself with ease, comfort and economy for the rest of your life.

Just try it yourself and you will find you would not part with it for many times its cost. The double-edged, flexible blades are so inexpensive that when they become dull you throw them away as you would an old pen.

The Gillette Safety Razor consists of a triple silver plated holder, 12 double-edged blades—24 keen edges, packed in a velvet lined leather case and the price is $5.00 at all the leading Jewelry, Drug, Cutlery, Hardware and Sporting Goods dealers. Combination Sets from $6.50 to $50.00.

If substitutes are offered refuse them and write us at once for our booklet and free trial offer.

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Gillette Safety Razor

NO STROPPING NO HONING

THE WORLD'S WORK PRESS, NEW YORK

THE WORLD'S WORK

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WITH A NEW PORTRAIT

SAFEGUARDING TRUST COMPANIES
By C. M. KEYS

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By ROBERT HAVEN SCHAUFFLER

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FEBRUARY, 1908
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WILLIAM HEINEMANN - LONDON

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A new style Victor

All the refined entertainment which only the Victor can supply, in a new and elegant setting.

The horn and all moving parts are entirely concealed in a handsome mahogany cabinet, and the music is made loud or soft by opening or closing the small doors.

The cabinet contains albums for 150 records and drawer for accessories. All metal parts heavily gold-plated.

The most complete
of all musical instruments.

Hear the Victor-Victrola at any music-house or talking-machine merchant's. Write to us for descriptive booklet.

VICTOR TALKING MACHINE CO., Camden, N. J.

Berliner Gramophone Co., Montreal, Canadian Distributors.

Victor
HIS MASTER'S VOICE

We Offer $500 and $1000 BONDS

of Gas and Electric Companies to Net present high rates of Interest for 27 years to come.

GUARANTEED as to Principal and Interest

THE NATIONAL LIGHT, HEAT and POWER COMPANY controls and operates these and other Gas and Electric Companies located in New England and the Middle West and Guarantees their Bonded debt both as to principal and interest.

Surplus EARNINGS

These Companies are earning a Substantial Surplus (their total earnings amounting to double their fixed charges) and notwithstanding general business conditions these earnings are steadily increasing.

Increase for October, November and December, 1907

Gross Earnings for October, November and December, 1907, increased 14.4% over the same months of 1906 while Operating Expenses but increased 5.63%.

Gas and Electric Companies are little affected by periods of business depression. Their Product is a necessity and their Income is practically an indirect tax upon the communities in which they operate.

Send for Circular I. M. and "National" Booklet

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BANKERS

30 Pine Street - - - - New York

AN UNUSUALLY STRONG INVESTMENT

$100 $500 $1,000

Guaranteed First Mortgage 6% Gold Bonds

OF THE

TWIN FALLS NORTH SIDE LAND & WATER COMPANY

MATURING ANNUALLY, 1910 to 1918

SECURED by (1) An absolute First and Prior Lien on rich Agricultural Land, the soil of which is unsurpassed in productiveness by any in the United States. This lien is created by the State in favor of the Company, under direct authorization of the United States. (2) A deposit of purchase money mortgages of some 2,000 settlers (who have purchased tracts of from 40 to 160 acres each) to the amount of one and a quarter times the par of the outstanding bonds.

GUARANTEED by THE AMERICAN WATER WORKS & GUARANTEE COMPANY of Pittsburgh, Pa. Established 1882, Paid-up Capital and Surplus, $3,600,000. This is the largest operating Water Works Company in the World. It has paid annual dividends of never less than 6% for the past 20 years. Its annual net earnings equal more than *five times* the annual interest charges on the $2,000,000 bonds of this issue, which are *unconditionally guaranteed*, as to prompt payment of principal and interest.

PROTECTED by UNITED STATES GOVERNMENT Legislation, known as the "Carey Act," which assures under its provisions every safeguard, making possible the strong security afforded by the present bond issue.

TRUSTEE: The American Trust & Savings Bank, Chicago.

For further Reference, write any Bank in Pittsburgh

The features combining to make this issue an unusually strong and attractive investment, are set forth more fully in a descriptive circular, and in a profusely illustrated booklet on "Irrigation," which will be mailed free upon request.

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131 South 5th Street, PHILADELPHIA, PA.

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MUNICIPAL AND CORPORATION SECURITIES COMPANY

JAMES S. KUHN, President. L. L. McCLELLAND, Sec'y & Treas.

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BUY TAX BONDS

Of schools, cities, villages, county drains, etc. Taxes provide means of payment, not dependent upon business for success.

We own many issues of 5% to 6% bonds, denominations $100 to $1,000, and offer them at attractive prices.

Send for our Booklet D, "An Argument for Tax Bonds." Get our offerings and your name on our mailing list.

References everywhere. Customers in thirty states.

REMOVAL NOTICE

Our business by its enormous growth demands change in location to a more central point. We have therefore removed to St. Louis, Missouri, and request our patrons to address us as below.

WILLIAM R. COMPTON CO.

235 Merchants-Laclede Bank Bldg., St. Louis, Mo.

1873 35 Years in the Loan Business 1908

The Monarch Loan Co.

Wichita, Kansas

Is Money Scarce?

Or is it idle for the want of a safe investment?

Money is Not Scarce

It is still in the country but the people who have it are demanding something more reliable than speculative stocks.

What investment is more stable than a well placed farm mortgage?

No one ever Lost a Dollar

on our farm mortgages. They have stood the test of panics and depreciation and protect themselves.

Idle money is a losing proposition. Active money, safely invested, makes more money.

Does this interest you? Send for information about our 6 per cent bonds, secured by first mortgage on improved farms.

Protector of Trust Funds

When a Trust Fund, an Estate, or a Legacy is set aside by a man he intends it to be for the benefit and relief of those whom he names.

Suppose the carrying out of the provision is left to the wisdom and discretion of an individual. He may resign, die, or prove incompetent.

The better plan is to ASSURE the carrying out of each bequest or direction by the appointment of the Guardian Trust Company of New York to represent you. It is authorized to serve as Executor, Administrator, Guardian, Committee, Agent, Attorney-in-Fact, or Trustee.

Its affairs are conducted by experienced New York business men who have faith in it as a company, pride in its soundness and success, and who give their attention to each Fund entrusted to them.

They solicit correspondence on any trust company subject.

Guardian Trust Company
of New York
170 Broadway, New York

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of Cities, hence irresistible is the increase in the value of, and the increase in Rental Returns from

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WE MAKE it possible for ALL INVESTORS to secure these increasing Rental Returns and the profit from the Increase in Value.

NINE high grade Central Business Properties, with value of $14,776,000 have paid 1500 investors over $390,000 in dividends.

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City and County
MUNICIPAL BONDS

Bonds of this nature are now selling at prices that yield better returns on the investment than for many years.

These are times to put your money into safe investments of this character, insuring excellent returns and safety of principal for a series of years.

You cannot afford to invest before investigating our offerings.

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THE NEW FIRST NATIONAL BANK
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The Story of Banking by Mail

and the reasons why this favorably known bank pays

4 Per Cent Interest

are graphically told in a new book we have just published. It will be sent free to any one interested in this subject. Please ask for Book "W."

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Capital, $2,500,000.00
Surplus, $2,500,000.00

Seventy-three Thousand Depositors.

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Investments

On application we will send our 30 page illustrated booklet descriptive of a

SIX PER CENT
FIRST MORTGAGE BOND

secured upon water power properties earning five times the interest charges under contracts, with companies capitalized at upwards of $200,000,000. Our booklet will demonstrate the safety of this form of investment.

Write for Booklet 35 B

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NEW YORK CHICAGO BOSTON PHILADELPHIA

New Reference Card

Showing at a glance all essential information on

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Bankers
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44 Pine Street Tel. 5670 John New York

We Can't Pay 6%

A prudent investor does not try to get 6%. Good New York City mortgages are the safest of investments. Poor mortgages are not. We choose the best and the BOND AND MORTGAGE GUARANTEE CO. guarantees them to you. It is for you to choose between risk at 6% and safety at 4½%. Our $500 Guaranteed First Mortgage Certificates pay 4½%.

Send for descriptive booklet

TITLE GUARANTEE AND TRUST Co

Capital and Surplus $12,000,000.

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NEW YORK

175 REMSEN ST.
BROOKLYN

THERE ARE MANY HIGH CLASS SECURITIES LISTED ON THE NEW YORK STOCK EXCHANGE SELLING BELOW INTRINSIC VALUE WHICH IF BOUGHT NOW WOULD YIELD ATTRACTIVE INCOME AND SHOULD EVENTUALLY ADVANCE MATERIALLY IN PRICE. WE SHALL BE GLAD TO CORRESPOND WITH YOU ON THE SUBJECT.

Send for Weekly Review and Investment Leaf B

J. S. BACHE & CO.,
(Members New York Stock Exchange)
BANKERS, 42 BROADWAY, NEW YORK

PREFERRED R. R. STOCKS

Are netting from 4 to 6½%

PREFERRED INDUSTRIALS

Are netting from 6% to 10%

Selected lists embracing interesting statistics furnished on application.

GREAT OPPORTUNITY for appreciation in principal invested at this time.

LARGE or SMALL
investments outlined

SCHMIDT & GALLATIN

Members of New York Stock Exchange
111 Broadway, N. Y.

Morton Trust Company

38 Nassau Street, New York

Executor, Trustee, Guardian.

Interest Allowed on Deposits.

THE FAME OF
TOM L. JOHNSON

President of this bank, as an earnest worker for the interests of the whole people is world-wide. Few men are better known and the efforts of none are more appreciated. In organizing this bank we enlisted the personal and financial co-operation of Mr. Johnson upon the understanding that it should be a bank *for "the people"* rather than for the benefit of a few capitalists.

It is particularly gratifying that we are able to present our

BANK MONEY ORDER PLAN

the most *perfect* method ever devised for handling accounts from depositors *anywhere* in the world. When you send money to us for deposit, we issue to you, instead of the old clumsy "pass-book," with its dangerous and inconvenient features, our Bank Money Orders. They show, on their face, the amount of principal and interest—you know what it is at a glance, without figuring. They are *Certified Checks* on this Bank, the *safest* known form of commercial paper. You *keep* them and when you *need* money,

YOU CAN HAVE THESE BANK MONEY ORDERS CASHED INSTANTLY—ANYWHERE

with interest at 4%. The plan is ideal—your money is *always* on deposit, yet you have it *constantly in hand* ready for *instant* use in time of need.

Deposits accepted for any sum from $1.00 up, and from the moment your money reaches us it draws

4% INTEREST

If you have money on deposit *anywhere*, or if you contemplate opening a savings account, you *owe* it to *yourself* and those dependent upon you to *investigate* this remarkably convenient and safe method.

Write for booklet "I" *today*, or send us your deposit and we will at once mail you BANK MONEY ORDERS for the full amount. The booklet is free—write for it now.

THE DEPOSITORS SAVINGS & TRUST CO.
Tom L. Johnson, President
CLEVELAND, OHIO.

The Greatest
Railroad System in the World, The Pennsylvania Lines

is described in an illuminating article in the March issue of this standard publication. The article is fully illustrated with maps, etc. The most intelligible and complete description of the modern Pennsylvania system ever published.

This is the third installment in the series by John Moody now running in the Magazine of the great railroad systems of America.

Other Features

in this same issue include:

The Imperial Valley of California—an entertaining illustrated article showing how the arid deserts of the far west are being converted, by irrigation, into rich crop-bearing lands; an article by Thomas Gibson, on the records of the stock market for the past 25 years, with a colored chart; an article on railroad economy of timely interest; and also the several special departments, news and otherwise, all of practical value to the investor, the banker, the man of affairs and the business man or woman.

1. Editorial Review.
2. Stock, Bond and Banking Record of the Month (with charts).
3. "The Education of the Investor."
4. Month's Chronology of Events.
5. Events in Other Lands.
6. News from Washington.
7. Canadian Affairs.
8. "The Market Place."
9. Railroad and Industrial Investment News.
10. Investment Queries Answered (free advice).
11. The Financial Book-World.
12. News of Banks, Trust Companies, Life Insurance, etc.

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Published on the 10th of every month at 35 Nassau St., New York City.

Send for **Sample Copy** *and Circular "D"*

Three Dollars a Year. 25 cents a copy.

United States of America

State of New York

6%

GOLD BONDS

The 10 year 6% Gold Coupon Bonds of the Underwriters Realty and Title Co. are secured by selected

NEW YORK CITY REAL ESTATE

The best and safest investment security in the world, the one constantly sought by conservative capital, is New York City real estate and the properties upon which the security of this Company's bonds is based are all **in** New York City, **not near** New York City.

The bonds are redeemable after three years, on demand, at holder's option and redemption is provided for by a **Sinking Fund** maintained under a **Trust Agreement** with the

GUARDIAN TRUST COMPANY OF NEW YORK

Continued absolute security is further insured by charter restrictions which compel the maintenance of paid-in capital and quick assets largely in excess of bonded obligations. They combine

Security—Income—Cash Availability

An absolute safe investment unaffected by Wall St. manipulation. Issued in denominations of

$100 $500 and **$1000**

Prospectus on request. Address Dept. R

Underwriters Realty & Title Co.

1 Madison Avenue, New York City

6% New York Central Realty Bonds

An Investment for Your Savings

Our 6% GOLD BONDS are secured by First Mortgages on NEW YORK REAL ESTATE, deposited with the WINDSOR TRUST COMPANY, TRUSTEE, $105,000 of these First Mortgages being deposited for every $100,000 of bonds issued. These bonds provide an investment for your savings which pay 6% interest and, after the first year, offer the *same privilege of withdrawal as a Savings Bank Account.*

Your investment can be placed in

Multiples of $100

These convenient amounts enable you to keep your entire surplus earning this high rate of interest.

For sums smaller than $100 we issue instalment certificates, to apply on our full paid bonds. You can purchase this FIRST MORTGAGE SECURITY in instalments of

5 Dollars and Up

each instalment bearing interest from the date of its payment and subject to withdrawal at any time.

For the large or small investor our 6% FIRST MORTGAGE BONDS combine the three essentials of the perfect investment: Absolute Security — High Earning Power — Cash Availability.

Write for our booklet. It explains how you can stop that loss of from ¼ to ⅔ on your interest earnings.

NEW YORK CENTRAL REALTY COMPANY

Suite 1738, 1133 Broadway, New York

(Surplus and undivided profits $1,000,000.00)

"Pushing Your Business"

is a strong new book on advertising by T. D. MacGregor, Ph.B., of the BANKERS MAGAZINE. It is crammed full of money making ideas—not theory, but the experience of one of the foremost advertising men in the country.

"PUSHING YOUR BUSINESS" gets right down to the fundamentals of copy, mediums and methods, and tells how to advertise successfully. It deals with the technique—the externals—of advertising, but more than that, it goes below the surface, down to bed rock principles. The book is new and different. It does not merely give you sample advertisements to copy, but *it helps you to help yourself*—to work out your own salvation in your advertising problems.

The author has had a hand in some of the biggest and most successful advertising campaigns. His "copy" has produced many thousands of dollars worth of business. He knows every branch of publicity from the inside. The book is written in the keen, personal style that has made the author's advertisements so resultful.

"I consider Mr. MacGregor one of the best writers of financial and real estate advertising in the country."—H. E. Lesan, Pres. Lesan-Gould Adv. Agency, St. Louis, New York and Chicago.

"I have never read a book on this subject that has interested or helped me as much as 'Pushing Your Business.'"—H. E. Woodward, Gen. Mgr., Rickert-Finlay Realty Co., New York.

"Mr. MacGregor's specialty is financial advertising and I think the work he has done in that line is the best I have ever seen."—J. E. Woodman, Hand, Knox & Co., Publishers Representatives, New York, Chicago, St. Louis.

Others who have spoken favorably of Mr. MacGregor's work are: David G. Evans, Treas., "Success"; Dr. Channing Rudd, "Wall Street Journal"; Thos. Balmer, Adv. Dir., St. Rys. Adv. Co.; E. St. Elmo Lewis, Adv. Mgr., Burroughs Adding Machine Co.; Waldo P. Warren, Adv. Mgr., Marshall Field & Co.; C. H. Rockwell, Adv. Mgr. National Cash Register Co.; H. S. Houston, Vice-President, Doubleday, Page & Co.: O. H. Blackman, Vice-Pres., Frank Presbrey Adv. Co.; and A. L. Wells, "Review of Reviews."

While dealing primarily with financial and real estate advertising, on account of the broad treatment of the subject, "PUSHING YOUR BUSINESS" is practically helpful to everyone who wants to get the biggest possible returns from his advertising. The book is illustrated, handsomely printed and bound in boards. ***Price $1.00,*** postage prepaid.

If you want *genuine* help in pushing *your* business send for this book now.

The Bankers Publishing Co. 92 William Street, New York.

FILL OUT AND MAIL COUPON TO-DAY

Bankers Pub. Co.
92 William St.
New York

Enclosed find $1.00, for which send me one copy of "PUSHING YOUR BUSINESS," by T. D. MacGregor.

Name.....

Address.....

.....

Income Insurance

YOU carry fire insurance for protection against loss of property. What provision have you made for loss of income in case you become physically disabled? Guarantee your income with our special policy.

Write for Particulars.

Empire State Surety Co.
86 William St. - - New York

Offices in all important cities.

NEW YORK REAL ESTATE **OWNERSHIP**

Produces Regular Incomes

The New York Realty Owners Co. has paid regular incomes to hundreds of shareowners for over twelve years.

Over 14,000 checks representing nearly **$1,000,000** paid for interest and dividends, with accumulated assets of over $2,500,000 are the results of this business.

Rents and profits from sales produce cash dividends; increased values of properties have increased the value of the shares showing large business profits annually.

6% Guaranteed, *or*
Full Business Profits.

You may buy shares of this Company and receive 6% guaranteed on sums of from $100 to $10,000 with the greatest security, or you can secure the full business profits derived from the ownership of Real Estate like the Astor family.

Hundreds of satisfied shareowners are the Company's best indorsers. Let us show you what they say. Write for Booklet W.

New York Realty Owners Co.
CAPITAL AND SURPLUS OVER $2,000,000
489 Fifth Avenue - - New York

A Safe Investment

A-R-E SIX'S are based on the ownership of nearly ten millions of dollars' worth of selected New York realty—the best security on earth. The apartment house pictured above is a type of many built and owned by this company. The conversion of large holdings of this Company at strategic centres in the City of New York into income-producing properties presents a splendid opportunity for the safe and profitable investment of large sums of money. A-R-E 6% Bonds are issued in either of two forms:

6% Coupon Bonds—*For Income Earning*, sold at par in denominations of $100, $500, $1000, $5000, or any other desired amount in even hundreds; paying 6% interest semi-annually by coupons attached, carrying the privilege of surrender for cash.

6% Accumulative Bonds—*For Income Saving*, purchaseable by installment payments covering terms of 10, 15 or 20 years; payments and interest payable in cash at maturity. The yearly payment rates per $1000 Bond are: 10-year term, $71.57; 15-year term, $40.53; 20-year term, $25.65.

THESE Bonds afford the safest and best mediums of investment upon the market today. Secured by Assets of $10,558,500.41, including Capital and Surplus of $1,640,969.24.

BEHIND the obligations of this Company is a 20-year record of uninterrupted success and fair dealing. A-R-E Six's afford you a just return, cash availability, absolute stability and unfluctuating security. Send at once for literature giving complete information, including map of New York City showing location of the Company's properties.

American Real Estate Company
513 Night and Day Bank Building
527 Fifth Avenue New York City

FOR INVESTORS

THE NEW YORK TIMES WEEKLY FINANCIAL QUOTATION REVIEW furnishes full and valuable statistics of bond and stock operations on the leading exchanges; conclusive and comprehensive surveys of monetary, mining and general industrial movements throughout the world.

Faithful and impartial record of financial facts.

Filed in thousands of banking and brokerage offices.

Mailed to any address in the United States, for one dollar a year.—Write for free sample copy.

THE NEW YORK TIMES

"All the News That's Fit to Print."

A Comprehensive Newspaper

FOR BUSINESS MEN

NEW YORK COMMERCIAL

MERCER P. MOSELEY, Publisher

Published "*Every Business Morning*." It contains complete and accurate reports of all financial markets as well as a comprehensive review of the financial news of the world.

Among other features of exceptional merit are the following markets and news relating to same:

COTTON, DRY GOODS, METALS,
PROVISIONS, DRUGS, CHEMICALS,
GROCERIES AND FRUITS

Its railroad news, mining news, crop news, insurance news, marine news, business and trade reviews are complete in detail and accurate in fact.

It gives the busy man the news he needs.

Subscription price outside of New York City, $6.00 a year.
In New York City, $9.00 a year.

NEW YORK COMMERCIAL .·. 8 Spruce Street

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KIPLING'S

Most Famous Book

The Day's Work

This is a most luxurious and delightful edition, printed on thin but opaque paper and bound in imported leather, which is a real pleasure to handle. We have never published a more thoroughly satisfactory book in every particular.

Bound in Rich Red Leather

Size 4¾x7⅜. $1.57 postpaid.

COUNTRY LIFE IN AMERICA — THE WORLD'S WORK — THE GARDEN MAGAZINE

DOUBLEDAY, PAGE & CO. NEW YORK.

Rudyard Kipling's Books

In full size.

THE SEVEN SEAS. New Edition. $1.54 postpaid.
MANY INVENTIONS. New Edition. $1.50.
COLLECTED VERSE OF RUDYARD KIPLING. $1.92 postpaid.
THE BRUSHWOOD BOY. New Edition. Illustrated by Townsend. $1.58 postpaid.
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PUCK OF POOK'S HILL. Illustrated in color. $1.50.
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THE JUST SO SONG BOOK. $1.28 postpaid.
KIM. $1.50.
THE DAY'S WORK. $1.50.
STALKY & CO. $1.50.
PLAIN TALES FROM THE HILLS. $1.50.
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THE KIPLING BIRTHDAY BOOK. $1.00.
UNDER THE DEODARS, THE PHANTOM 'RICKSHAW AND WEE WILLIE WINKIE. $1.50.
THE LIGHT THAT FAILED. $1.50.
SOLDIER STORIES. $1.50.
(With Wolcott Balestier) THE NAULAHKA. $1.50.
DEPARTMENTAL DITTIES AND BALLADS AND BARRACK-ROOM BALLADS. $1.50.
SOLDIERS THREE, THE STORY OF THE GADSBYS, and IN BLACK AND WHITE. $1.50.

NO MINING OR OIL ADVERTISEMENTS IN THE WORLD'S WORK

We believe mining and oil stocks are speculative in the highest degree and we have no advertising space to sell to those offering them. This is doubtless one of the reasons why THE WORLD'S WORK gives such good results to advertisers offering bonds and other investment securities.

THE TICKER

A MAGAZINE OF THE MARKETS **THE INVESTORS' MENTOR**

CONTENTS MARCH NUMBER

Modern Bond Houses and Their Clients.
Municipal Bonds.
The Government Standard on Bonds.
Some Fundamentals of Investment Theory and Practice.
Anti-Option Legislation, by Henry Clews.
How the Amount of Money in Circulation Affects the Merchant, by Roger W. Babson.
Investment Yield of Short Term Notes, by Montgomery Rollins.
"Inside Information."
The Logic of Speculation.
Who Gets the Profits? A Problem Story.
The Machinery of Manipulation,—A Market "Shakeout" Explained.
Some Good and New Anecdotes.
Queries and Answers on Market Science.

Sample copy 25 cents; four months trial subscription $1; Yearly $3, with a copy of a famous $7 book, the STORY OF ERIE, as a premium.

TICKER Publishing Co.
858 U. S. Express Bldg., Rector St., N. Y.

DETACH THIS

and send it to a friend

.....

Dear.....

Because I like The World's Work and read it every month I want you to know about it. I don't get a chromo free if you subscribe, but I would get a lot of satisfaction in knowing you were enjoying the magazine I like so much. All you have to do is to put your name and address on the blanks below and enclose a dollar—you will get full four months. It's worth risking, isn't it, on my say-so?

Signed.....

New name.....

Address.....

City.....

W. W., 4 '08

SIXTY-THIRD YEAR

New York Life Insurance Co.

346 BROADWAY . . . NEW YORK

To the Policy-holders:

I submit below a condensed Balance-Sheet, based on market values December 31, 1907, showing the Company's condition on that date.

Perhaps in no other year of its history have conditions existed which enabled the Company to serve its policy-holders so widely and so directly. The following facts show, in a general way, actual cash paid to beneficiaries, loaned to and paid for policy-holders and invested for the security of contracts:

Paid to beneficiaries under 8,931 policies which matured by death of insured	**$22,761,594**	
Paid to holders of 2,354 Endowment policies which matured during the year	**5,802,736**	
Paid to Annuitants	**1,774,484**	
Paid to holders of matured Deferred Dividend policies—Guaranteed value of policies	**4,407,812**	
Paid to owners of policies surrendered	**7,424,884**	
Paid dividends in cash to policy-holders	**4,710,461**	
Paid premiums for policy-holders out of dividends	**1,166,892**	
Direct cash benefits to policy-holders, over		**$48,000,000**
Paid to 81,000 policy-holders in loans on the security of their policies at 5% and without fee or charge, over		**27,000,000**
Paid for investments to cover increase in legal reserve		**28,000,000**
Total Direct Benefits, Loans to and payments for policy-holders and Increased Reserves, over		**$103,000,000**

As evidence of the efficiency with which your Trustees and the Officers of the Company have discharged their duties I invite your attention to these additional facts:

	1906	**1907**
Rate of interest earned on total mean investments in Bonds	**4.16**	**4.24**
Rate of interest on Bond investments of the year	**4.02**	**4.34**
Rate of income actually realized on Real Estate owned	**4.85**	**5.03**
Rate of income actually realized on Real Estate mtges.	**4.44**	**4.55**
Dividends to be paid in 1908		**$6,200,000**

The Company is sound in every part. That it retains the confidence of its members and that its assets are of a high order is conclusively shown by the fact that its cash income during 1907 was over $102,000,000.

It is efficiently serving directly one million people, indirectly probably five millions, resident in every country of the civilized world. **It could with increased economy and mutual advantage better serve directly two millions of people and indirectly ten millions.**

As one of the forces in society which foster self-respect, cultivate providence, prudence and responsibility it ought, in common with all kindred movements, to be allowed unlimited opportunity, under full publicity. At the present time this Company is by the State limited in its efficiency, limited in its usefulness, and limited in the provisions which it may make for the security of your contracts.

In 1905 the membership of this Company was disturbed and alarmed by revelations in life insurance, revelations which led directly to legislation by New York and by other States. It is impossible now to correct any of the misstatements, misconceptions and misunderstandings of that time; it is too early to attempt to justify either men or companies. Time will do that. But you then asserted yourselves through the force of public opinion, a force against which no man or any body of men can stand for any length of time. Life insurance as a whole was purified.

The sections of the Armstrong laws which demand publicity, compel economies, insure care in investments and protect you against improper transactions with your funds, have aroused a high sense of Trusteeship. They have benefited not only life insurance but all corporate life, and not a line of those sections should be repealed.

But there are other sections which are dangerous and reactionary. They have already checked the growth and progress of life insurance. This is a national calamity.

The Companies of New York State, which for some years prior to 1905 added about $500,000,000 a year to the volume of outstanding insurance, recorded a large loss in 1907. In 1906 these Companies lost $150,000,000.

In other words the laws have gone too far. Reform was necessary; but reform discredits and endangers its own achievements when it writes vicious and dangerous principles into the statutes of the State.

Against such legislation and against such results you ought now to assert yourselves through public opinion as emphatically as you did against evils in management in 1905. Your personal interests demand it, your duty as citizens who instinctively rebel against laws which open the door to paternalism and socialism also demands it.

Some of the laws which menace your interests and are the product of a false theory of statesmanship are:

1st. Laws which limit the free surplus a company may hold. The shrinkage in securities within twelve months represents a wider fluctuation by nearly two to one than the margin the law intends the companies to have for contingencies.

2nd. Laws which substantially put an end to the issue of insurance on impaired lives,—a branch of the business which up to the enactment of these laws was perhaps unsurpassed in real usefulness.

3rd. Laws under which the State undertakes to manage the details of business,—introducing a vicious principle into legislation. Seeking to prevent extravagance, the law prevents growth.

4th. Laws which limit the legitimate activities of life companies,—thereby reversing the present struggle against combinations in restraint of trade, and arbitrarily restraining competition.

5th. Laws in nearly every State of the United States which impose an income tax on premiums of life insurance alone, and not on any other business—thus raiding trust funds, penalizing prudence and thrift, and unjustly discriminating against property dedicated to a sacred use.

This Company is not merely a corporation, something apart from you. It is yours,—your property to defend and protect.

The menace to life insurance just now is not in management, but in legislation. The people have been vigilant and effective against the former; the time has come for them to exercise their rights and their authority against the indefensible aggressions of the latter.

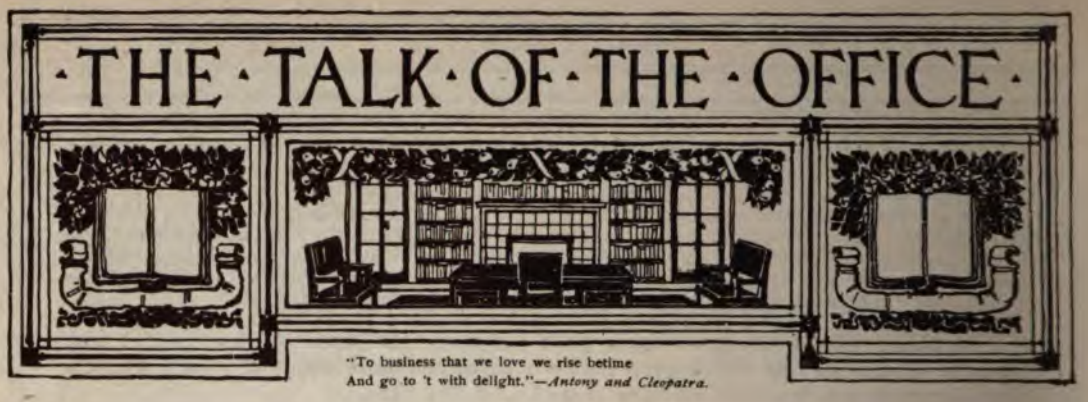
A pamphlet giving full information about the condition of the Company at the close of 1907 will be forwarded on request to any policy-holder or any other person interested in life insurance.

Further information about existing laws which are restrictive and dangerous, or about laws proposed from time to time in different legislatures threatening your interests, will be gladly furnished, and inquiries regarding such measures are solicited.

New York, March 14, 1908. **DARWIN P. KINGSLEY, President**

Balance Sheet, December 31, 1907

ASSETS		LIABILITIES	
1. Real Estate	$ 12,721,861.05	1. Policy Reserve	$432,872,357.00
2. Loans on Mortgages	50,217,704.06	2. Other Policy Liabilities	5,890,977.35
3. Loans on Policies	73,236,951.23	3. Premiums and Interest prepaid	2,311,879.23
4. Loans on Collateral	900,000.00	4. Commissions, Salaries, etc.	171,141.73
5. Bonds (market vals. Dec. 31, 1907)	334,979,519.85	5. Dividends payable in 1908	6,200,938.18
6. Cash	9,271,727.31	6. Additional Reserve on Policies	2,791,558.00
7. Renewal Premiums	7,487,691.41	7. Reserve for deferred Dividends	35,863,716.00
8. Interest and Rents due and accrued	5,593,352.96	8. Reserve for other purposes	8,306,240.38
	$494,408,807.87		$494,408,807.87



"To business that we love we rise betime
And go to 't with delight."—*Antony and Cleopatra.*

BIND YOUR WORLD'S WORK

THE present number ends the fifteenth volume of this magazine. You will always be glad if you save your numbers and bind them. You can have your local binder do it, and we will furnish index and title page, or we will sell you a binding case for 47c postpaid, or we will bind your issues for 75c, the subscriber to pay the express charges.

AN EXPERIMENT IN ILLUSTRATING

There have been so many complaints of the shiny paper (which it is absolutely necessary to use to print fine illustrations) as being disastrous to the eye, that we have tried in this number of *The World's Work* to distribute this so-called art paper through the magazine, and print the text on paper which is less smooth, and, in a way, easier to the eyes. We should be interested to have the opinions of any readers, pro or con, and we leave the matter to them to decide whether we shall continue this or go back to our usual way of illustrating the magazine.

SPRING BOOKS

Some of the most interesting books that we have ever been able to announce are on our list for 1908.

In the first place we congratulate ourselves on having the pleasure of publishing so worthy and excellent a book as "The Ancient Law," by Miss Ellen Glasgow — and also congratulate the critical and discriminating readers that the book has been widely appreciated; its popularity seems to be daily increasing.

Last month we published an account of Dr. Frederick A. Cook's ascent of Mount McKinley, the highest mountain in the United States, which has baffled all explorers heretofore. This book has been published under the title of "To the Top of the Continent," and is beautifully illustrated.

The whole edition of The Duke Litta's novel, "The Soul of a Priest," was sold a few days after publication.

A new edition of Mr. Kipling's "Seven Seas," which we have added to the set bound in green cloth, is ready, and we are preparing to publish a pocket edition of Mr. Kipling's most popular works in flexible leather. This has been done in England with great success, and we trust that these light and beautiful books which can be carried in the pocket, open flat and are delightful to the hand, will have a real success. The first volume will be "Kim," and the second "The Day's Work." "Kim" is now ready.

The "Complete Mountaineer," is the most sumptuous and adequate book on the subject, and it is sold at $5.10, postpaid, as distinguished from the high prices which most of these books usually bring.

A little later we shall publish "Jack Spurlock — Prodigal," Mr. Lorimer's first novel — a book of real humor.

"Egypt, and How to See It," is a small handbook with many colored illustrations.

"The Ideas of a Plain Country Woman," is a book which will appear simultaneously with the publication of this magazine, and contains common sense ideas which have been followed by a host of readers in the *Ladies' Home Journal.*

In May we shall have the pleasure of publishing Mr. Maurice Hewlett's book "The Spanish Jade," which is an exquisite novelette in a Spanish setting, and written with a skill and feeling of which Mr. Hewlett is master. It is illustrated in a really unique way by Mr. W. Hyde.

ADVENTURES IN CONTENTMENT

If any reader of *The World's Work* has not read this book, we 'd like to send it to him at our expense, with the understanding that he pays after he has read it, or that he returns it. We have tried this experiment with hundreds of readers, and have not found a
tive one. This is the story of a
the city, and became a philos
country. It is not a practical bo
raise vegetables, but one of real
interest. It might be called "The
of Content." $1.32 postpaid.

NOT
ALL
TALK
CLEANS
SCOURS
POLISHES
E.MORGAN'S SONS
N.Y.
SAPOLIO
It does the work
SAPOLIO

OF ALL SCENTED SOAPS PEARS' OTTO OF ROSE IS THE BEST.

"All rights secured."

TIFFANY & CO.

Diamond and Gem Merchants, Goldsmiths, Silversmiths,
Stationers and Dealers in Artistic Merchandise

Out-of-Town Service

The facilities of Tiffany & Co.'s Mail Order Department place at the disposal of out-of-town patrons a service approximating in promptness and efficiency that accorded to those making purchase in person

On advice as to requirements with limit of price, Tiffany & Co. will send photographs or careful descriptions of what their stock affords. This request involves no obligation to purchase

To patrons known to the house or to those who will make themselves known by satisfactory references, Tiffany & Co. will send for inspection selections from their stock

Tiffany & Co.'s wares are never sold to other dealers and can be obtained only from their establishments, in New York, Paris and London

Tiffany & Co. 1908 Blue Book

Tiffany & Co.'s 1908 Blue Book is a compact catalogue of 666 pages, containing concise descriptions, with range of prices of jewelry, silverware, clocks, bronzes, pottery, glassware, etc., suitable for wedding presents and other gifts—Blue Book will be sent upon request

Fifth Avenue and 37th Street, New York

The Ancient Law

By

ELLEN GLASGOW

THIS impressive story not only tells most dramatically the triumphant fight of Daniel Ordway with his own past, but it leaves the reader with a profound conviction that the struggle—in spite of its bitterness, its disappointments—was worth while. Miss Glasgow makes one smile in delight at her inimitable Virginia small town characters; she tells a love episode of rare charm; but above all her book inspires one with fresh confidence in the possibilities of human nature. It is this which made one of the most famous English publishers say, "She writes like George Eliot."

$1.50

BY THE SAME AUTHOR

The Wheel of Life

"The best work of an author all of whose books compel attention."—*N. Y. Evening Post.* $1.50

The Deliverance

"A book which should have everlasting life."—*Louisville Courier Journal.*
Illustrated in color by Schoenover, $1.50

The Battle-Ground

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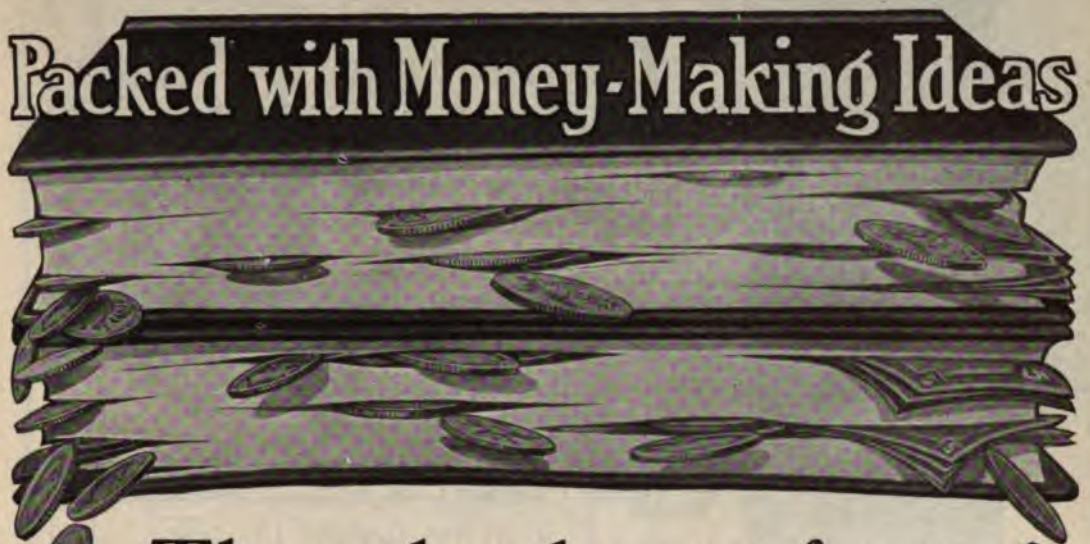

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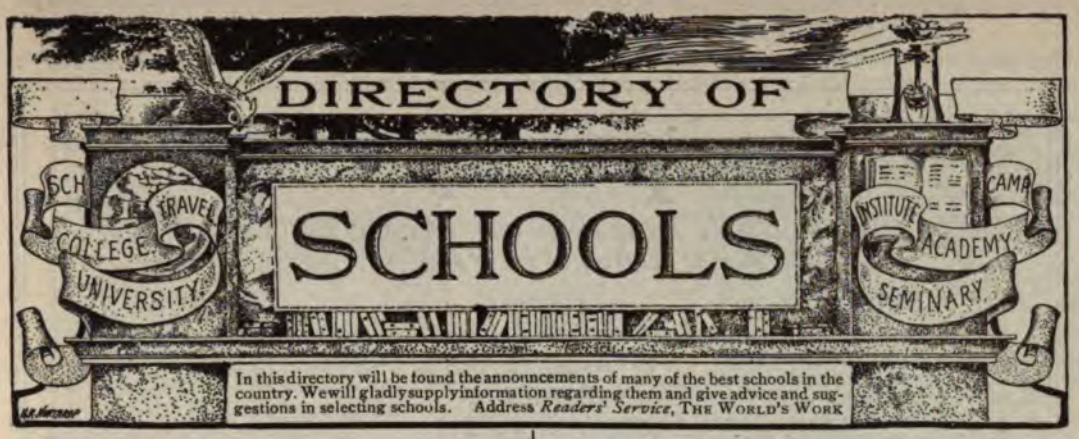

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103.—DAVENPORT. *Q.* Did the Union Pacific ever have an issue of convertible bonds before, and if so why did it retire them and issue some new ones?

A. The Union Pacific issued $100,000,000 of convertible bonds in 1901, and they were all, or nearly all, converted during the long rise of the stock in 1905 and 1906. They are now represented by common stock. They paid 4 per cent., and the stock pays 10 per cent. The new bonds were issued to pay for stocks bought in 1906 and 1907, very largely. The old bonds were used to finance the purchase of the Northern Pacific stock bought before the panic of May 9, 1901. The two transactions have only an indirect relationship.

104.—FORT WORTH. *Q.* Do you thing that the St. Louis & San Francisco will shortly pay dividends on its second preferred? I am told that it earned 20 per cent. on this stock in 1907. The Union Pacific did not earn any more than that, and it pays 10 per cent.

A. It is hardly to be expected that the road will resume dividends at present. In fact, conservatism would prompt going very slowly, so long as the road needs money constantly for improvements and equipment. In addition, the coming year is likely to be one of relatively high expenses, compared with gross earnings.

As to the 20 per cent. statement, it is literally true, but actually misleading. The company has a very small stock capital, compared with its debt. Consequently, a very small margin over fixed charges may show a very high percentage on the small stock. The case of the Union Pacific, with its enormous stock issues, is entirely different. If you will figure out the percentage that the net would have to shrink in each case to wipe out the margin for the stock you will see the point quite clearly.

105.—BUFFALO. *Q.* I have $5,000 of Canada Southern second bonds. I thought they became first mortgage bonds on January 1st, but they tell me it is not so. What is the fact of the matter?

A. The issue of first mortgage bonds, which should have been paid off on January 1st, has been extended for five years, with an increase of interest. You may think that strange, and perhaps it is, but it is the fact of the matter. There is nothing in your bond to prevent the extension of the first mortgage bonds. If there had been, they could not have been extended. If anyone tries to sell you second mortgage bonds on the idea that they will "soon be first mortgage," always inquire about extensions of the other bonds.

106.—ST. LOUIS. *Q.* About how much has been saved by the omission of dividends up to the present time?

A. The best compilation makes the total about $16,000,000, not allowing for dividends declared in stock bonds, etc. This total covers the period to January 8th, and includes twenty-six companies.

107.—MUNCIE.. *Q.* What do you think of buying farm mortgages in a good Western state to yield 7 per cent? Is it safe?

A. Selected farm mortgages are excellent investments for people who are in touch with the business conditions surrounding them. We do not advise indiscriminate investment of this sort. The best savings bank laws of the East ruled against the Western farm mortgage after the panic of 1893, chiefly on the ground that proper investigation of the properties was impossible. If you are "on the ground," or can buy through established and conservative dealers whose honesty is above suspicion, you need not hesitate. They should be bought "for revenue only," and to hold to maturity, as the market does not fluctuate to any extent except in disaster.

108.—MASSACHUSETTS. *Q.* Owing to the market conditions, my town is selling an issue of general bonds to give 4½ per cent. These bonds have never sold below a 4 per cent. basis before. I have never bought corporation bonds. Do you think I might get some profit out of buying these bonds at 4½ per cent.?

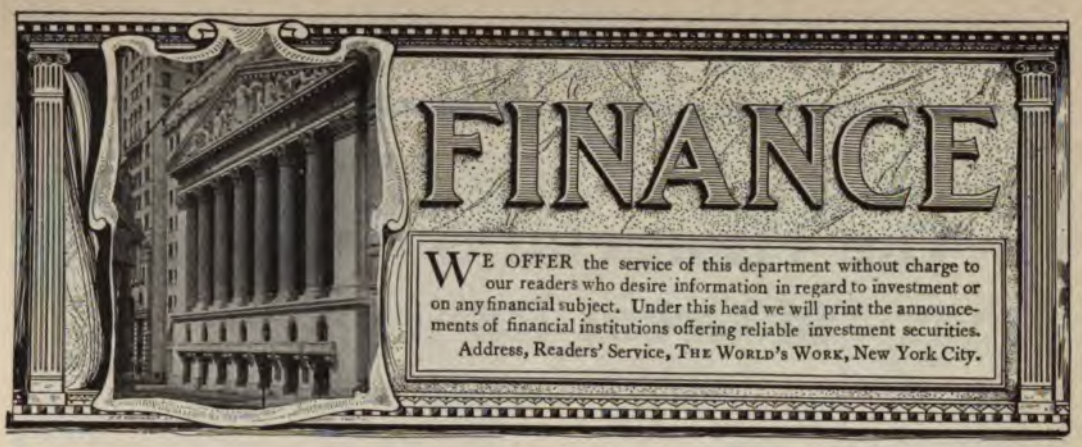
A. Since, from your slight description, we judge that the issue is part of a large general issue, and has some market locally, you might make about 10 per cent. by buying in the present depression, and selling if the normal conditions return with normal times. It is an extremely conservative investment, and in line with the best traditions of your state. Of course when the time comes, you will probably want to keep your bonds, rather than sell them, because you won't be able to reinvest the funds to any great advantage. However, that is your affair.

109.—TORONTO. *Q.* I wrote to my banker in New York asking for information about a "gilt-edge" investment to yield 6 per cent. He wrote back, offering me, as "gilt-edge," the bonds of an industrial company in an undeveloped state in the West, with a bonus of 50 per cent. in stock. Is that "gilt-edge"?

A. We advise you to change your banker as quickly as possible. There is nothing wrong with stock bonuses, particularly at a time like this, when every business-like investor seeks to share in equities, as well as mortgage security, but the bonds described in your circular letter are not even fair speculative bonds. They look, from this distance, like an outright gamble. To call them "gilt-edge" is to betray your confidence.

110.—SAVINGS BANK. *Q.* Does the law allow a Connecticut Savings Bank to buy the consolidated bonds of Atlantic Coast Line, since it has ceased cash dividends?

A. Consult the Superintendent of Banks. The law does not specify "cash" dividends, but the point is clearly a case calling for a ruling by the Attorney-General. In New York a similar question concerning Missouri Pacific has already been referred to the Banking Department.



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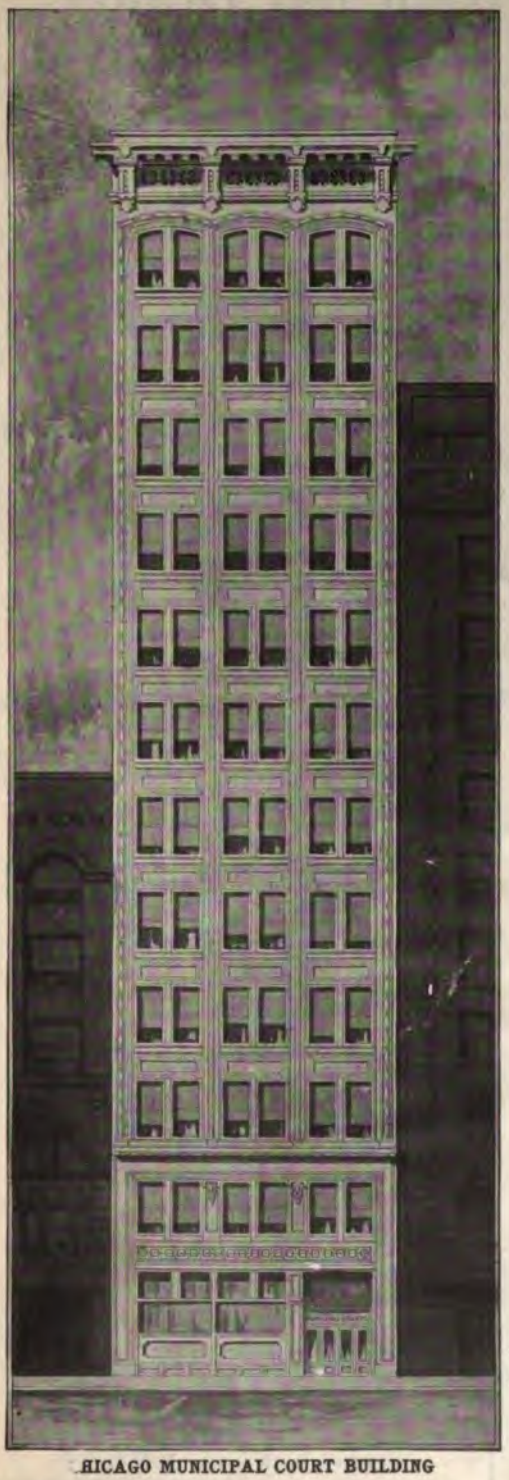

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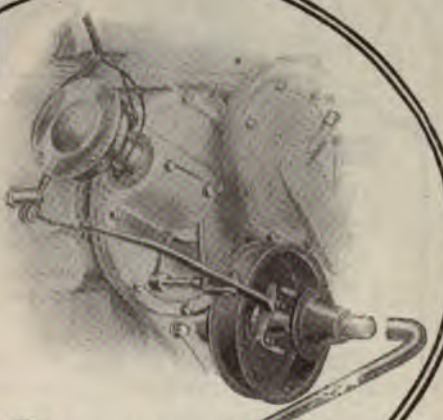

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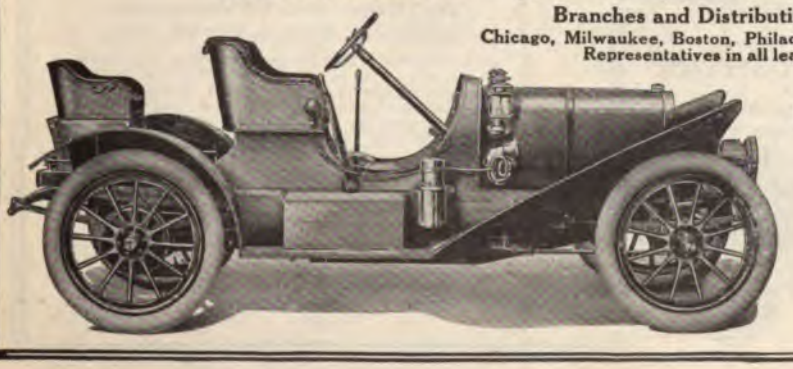

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And *hand*-mixing *can't* be *thorough*—*Can't* thoroughly combine the *pigment* and *oil*—

There'll be drops of *oil* and particles of *pigment* that haven't *united*.

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Until *all* the paint-pigment is thoroughly combined with the oil—Until *every minute drop* of the liquid holds in solution its share of *paint*-pigment—And *that's* the best paint.

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You can add as much to the comfort and convenience of the other rooms in your home as you can in the kitchen, by having a supply of running water always available, day and night.

Whether your home is in the country, in a village, a town or a city—anywhere—where there is no waterworks, you can have running water in any room—kitchen, bathroom, bedroom, laundry—at little cost.

You can have running water under high pressure for your lawns, flower beds, gardens or barns—without unsightly storage tanks or complicated machinery.

The Kewanee System of Water Supply

will save innumerable steps in housework, and enable you to have your home hygienic and sanitary as well as convenient and comfortable.

It will give you the same service that a city water supply gives at less expense—for you have no water tax to pay.

Every Kewanee System is sold under a guarantee of absolute satisfaction. You take no risk. We guarantee satisfactory service.

Write today for complete illustrated catalogue showing how easy it is for you to have this perfect water supply service—no matter where you live.

Complete Kewanee Systems cost from $75 up, according to the requirements.

Simply fill out and mail us the attached coupon.

Kewanee Water Supply Company,
39-44 Franklin St., Kewanee, Illinois.

No. 32 Broadway, New York.
820 Marquette Bldg., Chicago.
404 Equitable Bldg., Baltimore, Md.

Fill Out and Mail Coupon Today

Kewanee Water Supply Co., Kewanee, Ill.

Gentlemen:—
I would like to have running water in my ...house, or.....
.....and also special information regarding the Kewanee System.
Mention kind of building to be supplied.

Name.....

Street and No.....

Town..... *State*..... 39-44

The Paint You Have to *Burn Off* is Expensive

Carter White Lead Does Not Crack, Scale or Check

The kind of paint that *costs* less *per gallon*, but *cracks* and *scales*, not only allows your property to *deteriorate*, but costs fully as much to *remove* as it did to *put on*.

Carter White Lead costs a little more to buy than ordinary leads, but is most *valuable*—most *economical* in *use*—because

CARTER
Strictly Pure
White Lead

wears better—keeps *brighter*. Its *superior whiteness* makes strongest tints.

Carter White Lead paint really *protects* property, forms a perfect elastic film which expands and contracts with surface covered. Carter does not crack or scale like ordinary paints, but wears down gradually, leaving a smooth surface for repainting, saving expensive burning and scraping.

Ordinary paint is a mere purchase, Carter White Lead—any color, applied by a reliable painter—is an investment.

Sold by all good dealers.

Our beautiful booklet, "Pure Paint," sent free, with a set of modern color schemes, should be read by every house owner. It tells how to avoid adulterated paints and be *sure* of the best.

CARTER WHITE LEAD CO.
W. P. Station 3, Chicago
Factories: Chicago—Omaha

To Be Sure It's Pure Look for *CARTER* on the Keg

CARBORUNDUM

A skilled mechanic loves a sharp tool.

Carborundum Sharpening Stones

produce a keen, even, lasting edge. And do it quicker and better than any other sharpening stone on earth.

Carborundum is made at Niagara, in the largest and hottest electrical furnace in the world.

It is very hard and very sharp.

It does not merely *rub* a tool, thus producing a rough, wiry edge.

It *cuts*, hence not only puts a keen, even edge on the tool, but maintains its own surface unimpaired. It does not wear away in spots. It does not become smooth or gummy. It is always uniform in quality.

Always ready for work.

REMEMBER THIS

There is a Carborundum Sharpening Stone for every requirement, from the honing of a razor to the sharpening of an ax.

LET US SEND YOU

a Carborundum pocket stone for keeping the pocket knife or small tools in order. In neat box, by mail, 15 cents.

THE CARBORUNDUM COMPANY

Niagara Falls, N. Y.

Foretelling the Future of a Painting Job

The outcome of your paint investment, involving gallons of paint and many dollars worth of labor, can be foretold, so far as the durability of materials is concerned, by examining a very small specimen of the White Lead which you propose to use.

Paint is made of a pigment and a liquid. The pigment, in order to have the best paint, must be Pure White Lead, the liquid Pure Linseed Oil and these ingredients should be *bought separately* and *mixed fresh as needed.*

To test the paint, take a small bit of the White Lead, before it is mixed with the oil or coloring matter, and blow a flame upon it with a blowpipe. If little globules of metallic lead form, the White Lead is pure, and you may allow the painters to go ahead. If the mass is stubborn and refuses to turn to lead, the outlook is bad. The White Lead has been adulterated and you will rue the day you allow the imitation paint to be used on your house.

FULL WEIGHT KEGS

The Dutch Boy Painter on a keg guarantees not only purity, but *full weight* of White Lead. Our packages are not weighed with the contents; each keg contains the amount of *White Lead* designated on the outside.

We Will Send a Blowpipe Free

The connection between this test and the durability (and consequent economy) of paint is told instructively in one of our booklets. This book, together with a blowpipe to test White Lead, will be sent free to any houseowner who intends to paint this season. Ask for Test Equipment U. Address

NATIONAL LEAD COMPANY

in whichever of the following cities is nearest you:

New York, Boston, Buffalo, St. Louis, Cleveland, Cincinnati, Chicago, Philadelphia (John T. Lewis & Bros. Co.), Pittsburgh (National Lead & Oil Co.)

Paris Line of the Terre Haute, Indianapolis and Eastern Traction Co.

Railway Work

THE Paris Line of the Terre Haute, Indianapolis and Eastern Traction Company is a specimen of railroad work which was laid out and constructed entirely by us.

This road is a high-speed, electric, interurban, sixteen miles in length. Its construction included 15 concrete bridges and culverts, and one 112-ft. truss bridge designed for 100-ton loading. 70 lb. A. S. C. E. Standard rail was used throughout.

The heavy cuts and fills required the use of steam shovel, Hedgewood rapid unloader, two standard gauge steam locomotives, and twenty 30 ft. flat cars.

We design and construct both electric and steam railways, and our service includes every detail of the work—from first surveys to completing and equipping the road for operation.

Our contracts are on a basis of cost plus a fixed sum, or cost plus a percentage. We therefore act as agents for our client, keep him fully informed as to cost, progress, etc., and submit vouchers for all expenditures.

Railway construction is an important feature of our business and to those contemplating work of this character we shall be glad to send our "Terre Haute" booklet. Write for it.

Stone & Webster Engineering Corporation
Constructing Engineers
147 Milk Street Boston, Mass.

We are prepared to design and construct water power developments, power stations, industrial buildings, railways, electrical transmission lines and distributing systems, either new work or extensions. Correspondence invited.

From "Reinforced Concrete in Factory Construction"

When You Build Use Concrete

It is Economical, Durable, Fireproof and Sanitary; needs no paint or repairs; is warmer in winter; cooler in summer than any other Construction and is adaptable to any type of

Factory, Warehouse or Mill

We have prepared for Manufacturer and Merchant a new book dealing solely with the important question of factory building.

"Reinforced Concrete in Factory Construction"

a book containing besides several general chapters on concrete, concrete aggregates, methods and materials for reinforcing—*ten chapters giving detailed descriptions of ten Concrete Factories and Warehouses* erected in various parts of the country by different systems. The photographs, sectional drawings, and specifications were furnished by the engineers in charge of the work. This book, profusely illustrated (250 pages, size 6½x9), pamphlet bound, sent free upon request to Architects, Engineers and Manufacturers who contemplate building. Cloth bound copies, 50 cents each.

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THE ATLAS PORTLAND CEMENT COMPANY ADVERTISING DEPT. 30 BROAD STREET, NEW YORK

Water will run up hill

when impelled by the simple little engine shown on this page. Merely attach a pipe to your well, spring or running brook, and you may have a large or small reservoir of water at an altitude far above your house; that is, one of these pumps is equivalent to an unfailing gravity supply the year round, and yet the power is right under your eye and can be regulated to suit your needs and conveniences. This power is practically automatic; it requires no skilled attendant or engineer; it is absolutely independent of any condition of wind or weather, and once installed, a

HOT-AIR PUMP

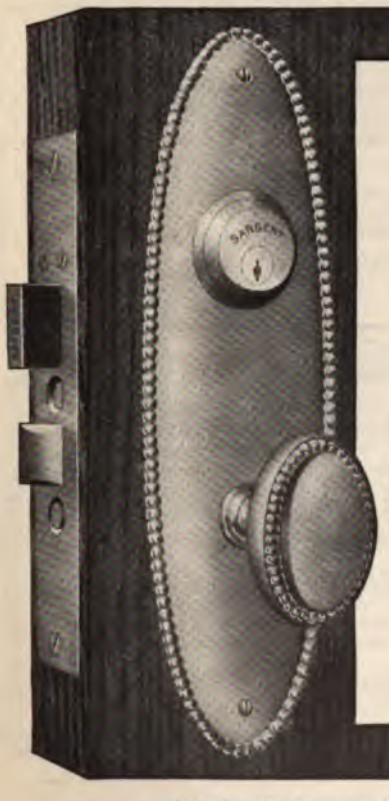
LASTS A LIFETIME

The cut upon this page shows the "Ericsson" Hot-Air Pump. The "Rider" is a similar pump. The motive power in each is identical; the "Rider" merely being of larger capacity. The world-wide popularity of these pumps and their adoption into every clime have naturally resulted in the appearance on the market of imitation pumps, not only inferior in construction and lacking in durability, but so named as to deceive the innocent purchaser. Complaints received from many, who have been thus imposed upon, impel us to advise intending buyers to look carefully at the pump and be sure that the name-plate of the Rider-Ericsson Engine Co. appears upon your purchase. When so situated that you cannot make personal inspection before ordering, write to our nearest office (see list below) for the name of a reputable dealer in your locality, who will sell you only the *genuine* pump. Over 40,000 are in use throughout the world to-day.

Write for Catalogue C1, and ask for reduced price-list.

RIDER-ERICSSON ENGINE CO.

35 Warren Street, New York
239 Franklin Street, Boston
40 Dearborn Street, Chicago
40 North 7th St., Philadelphia
234 Craig Street West, Montreal, P. Q.
22 Pitt Street, Sydney, N. S. W.
Amargura 96, Havana, Cuba



Hardware as a Decorative Feature

Every home-builder should make the selection of hardware trimmings a personal matter. If the choice is left to someone else you are almost certain to be dissatisfied with the result. Make it a point to select the design and finish of the hardware *yourself*.

SARGENT'S
Artistic
Hardware

offers unusual possibilities for making the hardware a decorative feature of the new home.

Write for Sargent's Book of Designs—Sent FREE.

If you are building a new home or *even planning* one, you ought to have this book. It's invaluable to home builders—filled from cover to cover with illustrations and suggestions for making the new home attractive. Shows 68 patterns of artistic hardware and explains the Easy Spring Principle of Sargent's locks. It is a rather expensive book, but we willingly send it *free* to those interested.

A Postal request will bring a copy by return mail. If interested in the Colonial, ask us to enclose our Colonial Book.

SARGENT & CO., 154 Leonard Street, New York

The Only Real Stains

If you have only seen the crude and tawdry colors of the thinned-paint imitations of

Cabot's Shingle Stains

you have no idea of the beautiful coloring effects of the true Stains. They are soft and deep, like velvet, but transparent, bringing out the beauty of the wood grain. Half as expensive as paint, twice as handsome, and the only Stains made of Creosote, "the best wood preservative known."

Samples on wood and Catalogue sent free on request.

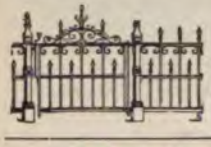
SAMUEL CABOT, Inc., Sole Manufacturers

3 Oliver Street, Boston, Mass.

Agents at all Central Points

Claude & Starck, Architects, Madison, Wis.

Roof stained moss-green, walls silver-gray with Cabot's Shingle Stains and lined throughout with Cabot's Sheathing Quilt for warmth



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Plain and heavy, also light and ornamental. Wire or Iron Fences. Highest grade at lowest prices. Write for catalog. **FREE**

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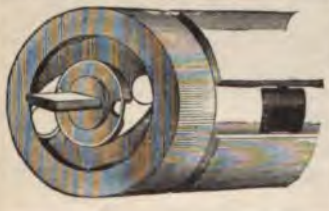

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Bear the script name of
Stewart Hartshorn on label.
Get "Improved," no tacks required.
Wood Rollers ***Tin Rollers***

BUTCHER'S BOSTON POLISH is the best finish made for floors and interior woodwork. Not brittle; will not scratch or deface like shellac or varnish. Send for free booklet. For sale by dealers in Paints, Hardware and House Furnishings. The Butcher Polish Co., 356 Atlantic Ave., Boston, Mass.

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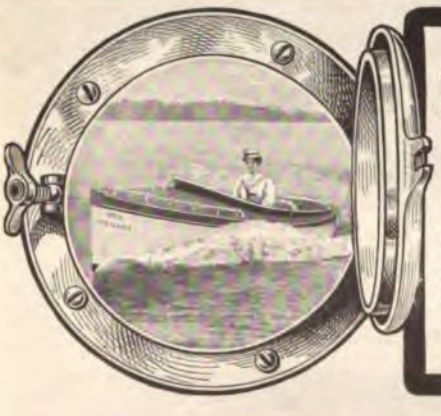

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and let us mail you our large illustrated catalogue which tells all about the celebrated Mullins Motor Boats, Marine Engines, Row Boats, Hunting and Fishing Boats. Investigate the Mullins before you buy any boat.

Mullins Steel Boats

Are the Fastest and Safest Boats Built

They are built of smooth, pressed steel plates with air-chambers in each end like a life-boat, and don't crack—leak—swell—dry out—wear out or sink. They are strong—safe—seaworthy—indestructible and much lighter, more buoyant, and faster than wooden boats. Every boat is guaranteed. **The ideal boats for sportsmen, families, boat liveries, resorts, parks, etc.**

The W. H. Mullins Co., 112 Franklin St., Salem, Ohio.

H. C. Squires' Sons (N. Y. Sales Agents) 44 Cortlandt St., New York.

Leonard Cleanable Porcelain Lined Refrigerators

EXCELL ALL OTHERS

The porcelain lining is real porcelain fused on sheet steel and indestructible. This means a sweet, clean refrigerator at all times. The doors are air-tight, which prevents sweat and mould.

There is a constant and automatic circulation within of pure, cold, dry air. Patent interior construction makes it impossible for water to ruin the wood work.

Cabinet work, finish and design are up to high Grand Rapids standard.

This style 33 x 21 x 46. Polished Oak, Round Corners, Quarter sawed Panels.

$33.00

Delivered as below.

YOUR ICE BILLS CUT IN HALF

There are 9 walls to preserve the ice (see cut below.) Price ⅓ less than tile or glass lining and the refrigerator is better. For sale by the best dealers or shipped direct from the factory. 30 days trial. Freight prepaid as far as the Mississippi and Ohio Rivers. Beware of imitations made of white paint. Write for free sample of porcelain lining and catalogue showing 30 other styles and prices.

Grand Rapids Refrigerator Co., 21 Ottawa St., Grand Rapids, Mich.

NINE WALLS of the Leonard Cleanable Refrigerator

HEATING the RIGHT Way

Just as "one star differeth from another in magnitude," just so is there a distinction in heating apparatus. There is always one BEST and that is the one you want for your home, your church, school, business building. From results given, we believe

CAPITOL BOILERS AND RADIATORS

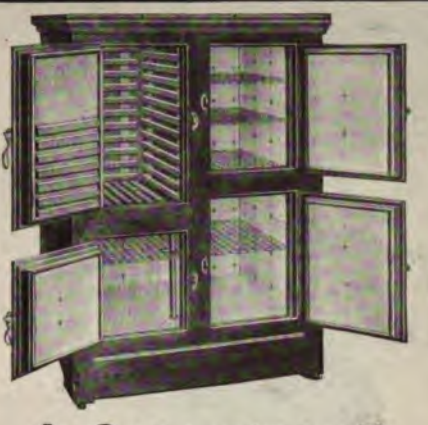
(Hot Water or Low Pressure Steam) to be that one BEST, combining fullness in heating efficiency with economy in operation with fuel of any description—ease and comparatively low cost of installation.

May we send you descriptive literature? The heating question is a serious one, and we know, you desire, if possible, to avoid making any mistake. Write Dept. N.

United States Heater Company.

Campbell Avenue, DETROIT, MICHIGAN

Branch Offices and Agencies in all principal cities



A Guarantee of Lasting Satisfaction

means more to you than a few days trial, because you cannot discover the faults of a refrigerator until you have used it several months. For over 25 years every McCray Refrigerator has been sold under a positive guarantee of lasting satisfaction.

The confidence of the public in the McCray guarantee is best evidenced by the fact that McCray Refrigerators are endorsed by the leading physicians, hospitals, sanitariums, hotels, clubs, etc., and are used in thousands of the finest residences. The U. S. Government also uses McCray Refrigerators in the Capitol, Congressional Library and other public buildings, on its battle ships and in its commissary department.

McCray Refrigerators

Have Stood All Tests

and have won an enviable reputation for superiority. They are made in regular sizes for immediate shipment, and Built To Order for all purposes.

McCray Refrigerators are lined with White Opal Glass, Porcelain Tile or White-Wood. No zinc is ever used as zinc corrodes and forms oxides that poison milk and other food.

The McCray Patent System of Refrigeration is beyond question the most efficient system of refrigeration ever invented, as it gives a perfect circulation of pure, cold **absolutely** dry air, and requires only one half as much ice as other refrigerators. There is never the slightest tainted or stale smell about a McCray Refrigerator.

Send Us This Coupon

and let us send you free our 40 page illustrated catalog that explains why McCray Refrigerators are superior to other refrigerators and different from ordinary ice boxes. Send us coupon now.

McCray Refrigerator Company,
671 Mill Street,
Kendallville, Ind.

Branches in all principal cities.

TEAR OFF, SIGN AND MAIL TODAY

McCray Refrigerator Company,
671 Mill Street,
Kendallville, Indiana.

Gentlemen:—Please send me your free Catalog of McCray Refrigerators.

Name.....

Street.....

City..... *State*.....

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A STAIN AND VARNISH COMBINED

JAP-A-LAC—THE HOME BEAUTIFIER

JAP-A-LAC is a stain and varnish combined; the original article of the kind made. It "Wears like iron."

You can use JAP-A-LAC on everything of wood or metal, from cellar to garret. The economy of its use is at once apparent, and a JAP-A-LAC home is always a bright, beautiful home.

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Try JAP-A-LAC today. Be sure to get the genuine, in a can like the illustration. Look for the Green Label.

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A WARNING AGAINST THE DEALER WHO TRIES TO SUBSTITUTE

If your dealer offers you a substitute, say to him: "No, thank you; I want what I asked for. Good bye." Trade with the dealer who gives you what you ask for. That's JAP-A-LAC.

Write for beautiful illustrated booklet, and interesting color card. FREE for the asking.

The name "GLIDDEN" on a can of varnish is a guarantee of highest quality. If you use varnishes for any purpose insist on Glidden's Green Label line and you will secure the best results.

The Glidden Varnish Co.

496 Rockefeller Bldg., Cleveland, O.

If YOUR dealer does not keep JAP-A-LAC, send us his name and 10c (except for Gold which is 25c) to cover cost of mailing, and we will send FREE sample (quarter pint can) to any point in the United States.

What THIS LABEL on a bathroom fixture Means to You-

THIS **"Standard"** Guarantee Label in "Green & Gold" appears on every piece of genuine **"Standard" Porcelain Enameled Ware**—the model bathroom equipment for your home. This label means that the bathtub, lavatory, closet, or any fixture bearing it, is a **guaranteed fixture**—guaranteed to be thoroughly sanitary, and with ordinary care to be a practically indestructible fixture; guaranteed by the makers to be in every respect a **strictly first quality fitting.** The **"Standard"** "Green & Gold" Label is your protection against the substitution of inferior goods. For the sanitary equipment of your home it pays to specify the most reliable equipment your money can buy. **It pays to specify "Standard" Porcelain Enameled Ware.** Specify **"Standard"** Fixtures, which cost no more than those made by inexperienced manufacturers, and look for the label to make sure you are getting the genuine.

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PORCELAIN ENAMELED WARE

is a perfect unity of iron and porcelain enamel—the strongest and most durable combination ever produced in a sanitary fixture. By a secret process of manufacture these two elements become amalgamated—each is made an integral and inseparable part of the other. **"Standard"** fixtures have thus the indestructible strength of iron with the snowy elegance of fine china. This extraordinary wearing quality of **"Standard"** Ware is only one of the reasons why these beautiful fixtures afford more years of satisfactory service per dollar of cost than any other plumbing equipment in the world.

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for our free 100-page book, "*Modern Bathrooms*"—the most complete and beautiful book ever issued on the sanitary subject. "*Modern Bathrooms*" illustrates sanitary equipment of every style and price and contains valuable information on how to plan, buy and arrange your fixtures in the most economical and attractive way. Every householder should have a copy. Send for it at once (enclosing 6c postage), giving name of your architect and plumber, if selected.

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know no seasons— they are welcome the whole year round.

In ten cent tins.

Also in twenty-five cent tins.

NATIONAL
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Fairy Soap is White and Pure

IT contains only edible products—no coloring matter to deceive the eye, no high perfumes to delude the sense of smell, no adulterants to destroy the natural velvety smoothness of the skin. Beware of make-believe soaps that masquerade under dyes and deceits.

The price of FAIRY SOAP is 5c. If you pay more than that—or if you buy other than FAIRY SOAP for the toilet and bath—you pay more than you should and get less than you could in FAIRY SOAP, the oval cake.

"Have You a Little 'Fairy' in Your Home?"

I Want You to Know My Razor as I Know It.

Over two Million sold in America in last three years.

Whether you rely upon the old fashioned razor or whether you depend upon the barber for your daily shave, there's still a ***better, quicker, more economical*** and ***sanitary*** way—the "Gillette" way—and my razor will convince you of this fact.

It is the better way because of the great convenience it affords—a slight turn of the handle enables you to have as close or as light a shave as you may wish—removing any beard without the least discomfort or irritation of the skin.

It is the quicker way because the thin, flexible, double-edged blades require ***No Stropping, No Honing.*** They are made of specially selected and tested steel, individually hardened, tempered, ground, honed and stropped by never-varying automatic machinery. They are so inexpensive that when dull you throw them away as you would an old pen. It takes but from three to five minutes' time with the Gillette to obtain the most delightful shave you ever had in your life.

It is the economical way because you may shave yourself at home or away from home at any time—saving you time, money and the endless inconvenience and annoyance of being dependent upon the barber. My razor not only produces daily dividends of satisfaction to its users but saves its cost inside of a few weeks.

I could talk to you a month about the good qualities of my razor and what it means to you, but what I want is to get you to ***try it just once*** and then you will know it as I know it, and would not part with it for any price.

Ask your dealer for the "Gillette" today and shave yourself with ease, comfort and economy for the rest of your life.

King C. Gillette

The Gillette Safety Razor Set consists of a triple silver-plated holder, 12 double-edged blades (24 keen edges) packed in a velvet-lined leather case and the price is $5.00 at all the leading Jewelry, Drug, Cutlery, Hardware and Sporting Goods Dealers.

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Ask your dealer for the "GILLETTE" today. If substitutes are offered refuse them and write us at once for our booklet and free trial offer.

Gillette Sales Company *279 Times Building New York City*

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NO STROPPING NO HONING

Williams' Shaving Stick

"The only kind that won't smart or dry on the face"

Williams' Shaving Soap lathers quickly and leaves that fine, soft, wholesome after-effect which is the most satisfactory thing about a good shave.

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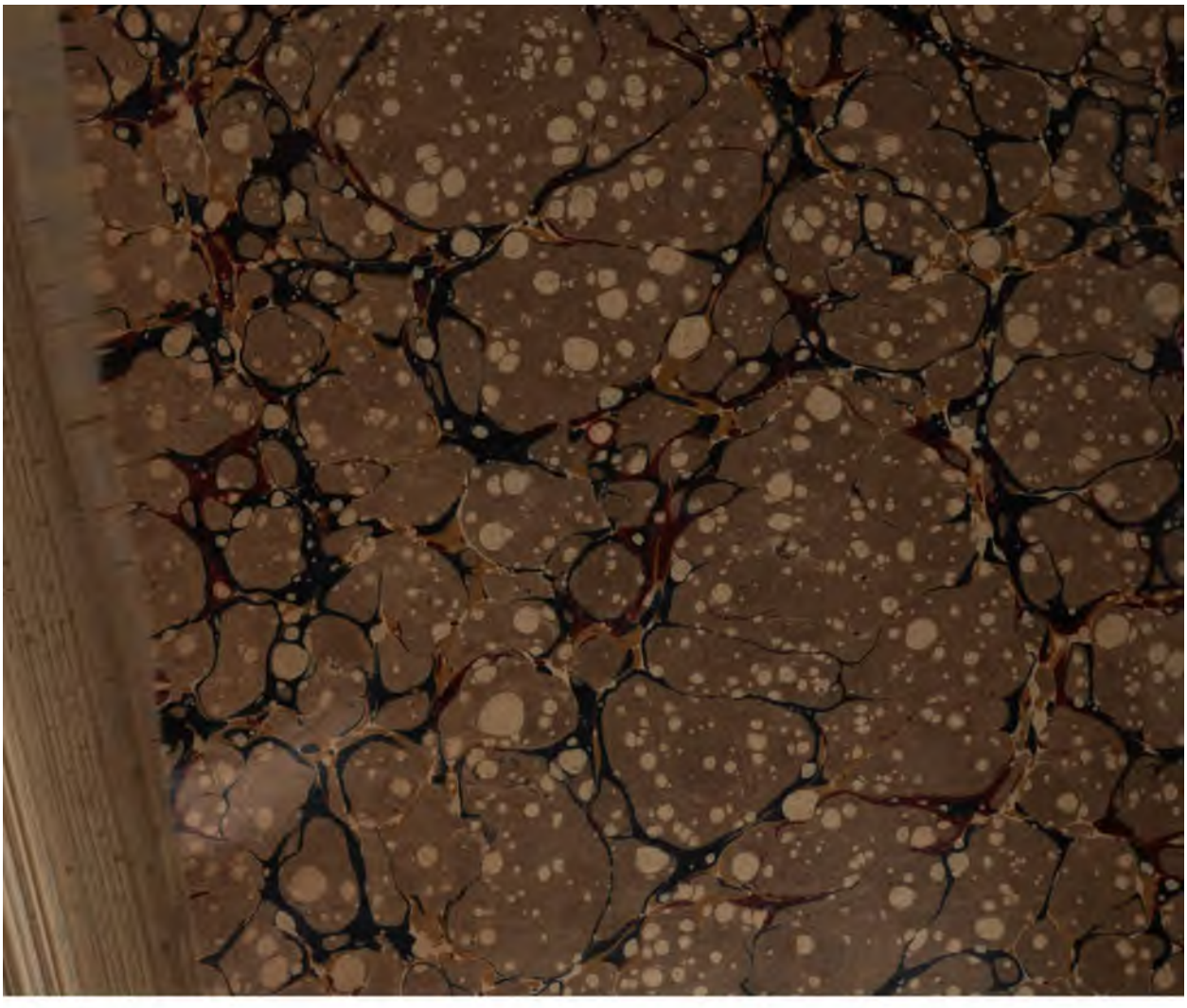

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